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ECONOMIC BASE STUDY

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DEPARTMENT OF COMMUNITY DEVELOPMENT — GAINESVILLE, FLORIDA

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ECONOMIC STUDY

Planning Division, Department of Community Development
Gainesville, Florida
March, 1969

Prepared by the City of Gainesville under Contract with the Florida Development Commission. The preparation of this report was financed in part through an urban planning grant from the Department of Housing and Urban Development, under the provisions of Section 701 of the Housing Act of 1954, as amended.

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TITLE: Economic Study

AUTHOR: Planning Division, Department of Community
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Present and Projected Income

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ABSTRACT:

The economy of the Gainesville Urban Area and Alachua County analyzed and projected on the basis of resident employment. Resident employment by industry group for 1950 and 1960 Census adjusted for changes in classification, underenumeration, and industries not reported. Annual employment estimated by ratio of trends between adjusted census and annual data series for various industry groups. Resident employment projected by fitting appropriate curve to annual data, supplemented by independent estimates where deemed desirable based on judgment of authors. Ratios established between resident employment and population; future population forecast on basis of said ratios and projected employment. Personal income and income per capita analyzed; household income of county and Gainesville Urban Area estimated. Future personal income estimated based on projected employment mix and past growth in real income. Future household income of county and urban area estimated.

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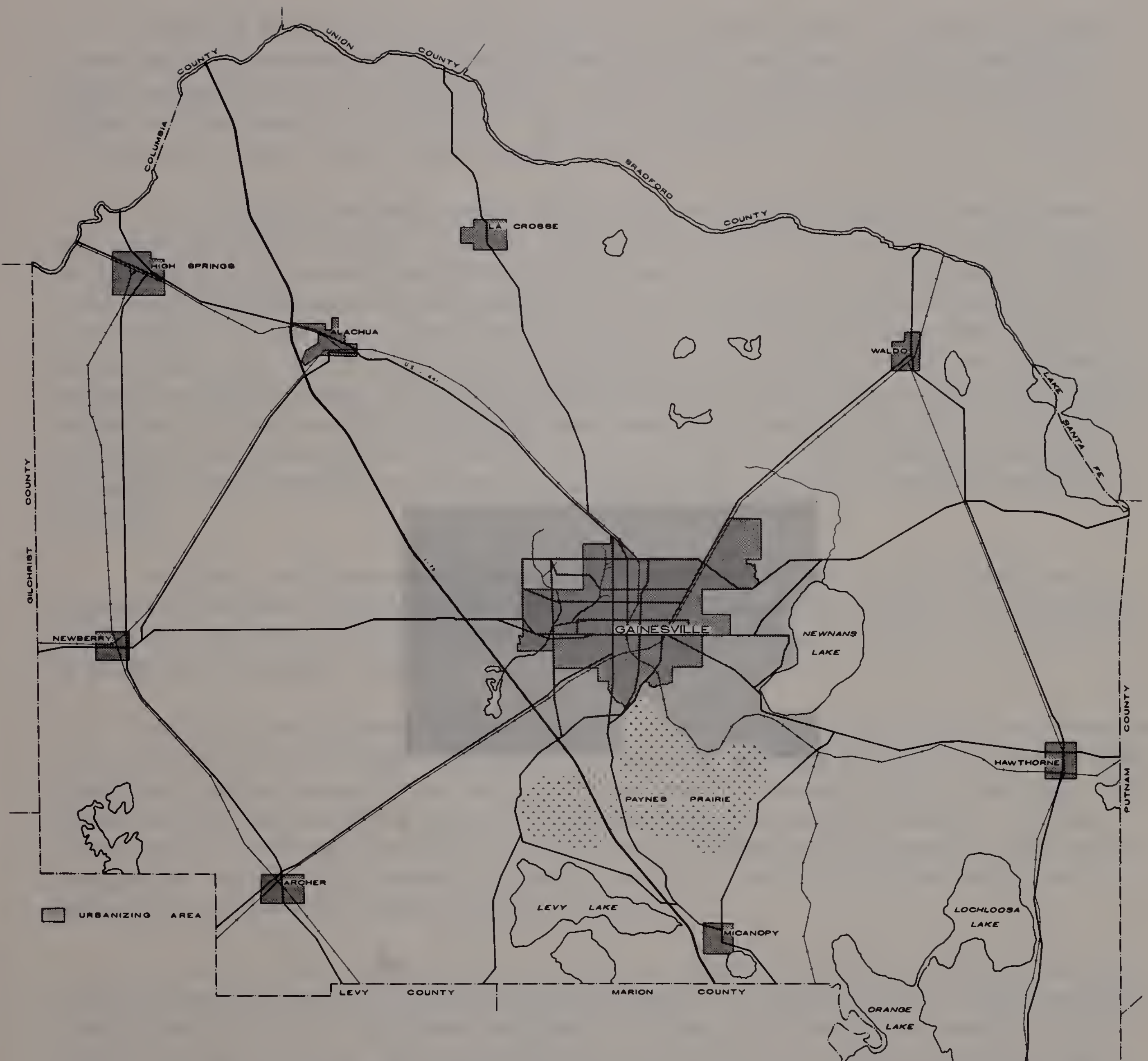

ALACHUA COUNTY
FLORIDA

ADDENDUM

ESTIMATED EFFECT OF POTENTIAL HIGHER ENROLLMENT AT THE UNIVERSITY OF FLORIDA ON THE EMPLOYMENT AND POPULATION PROJECTIONS OF THE ECONOMIC STUDY

Following the completion of this report but prior to its release, it was announced that a study had been presented to the Board of Regents in which enrollment at the University of Florida was projected to be 34,501 in 1980. This is about 8,500 more than the official enrollment ceiling adopted by the Regents. (The actual ceiling was 25,000 full time equivalent (FTE) students, which would be about 26,000 total enrollment.)

It is well known that the economy of the Gainesville Urban Area has in recent years very closely paralleled that of its largest employer,the University. This fact was discussed in the Population Study prepared earlier by the Planning Division. Thus, while it was concluded in this report that dominance by the University will wane somewhat in the years ahead, it is still true that a change in enrollment and subsequent employment of this magnitude would have an undeniable effect on the projections contained herein. It should be pointed out that there has been no official change in the ceiling at the date of this writing, only a report containing projections. At the time the original projections were being prepared diligent effort was made to determine the firmness of the 25,000 figure. At that time no official connected with the University would unofficially or otherwise speculate that the ceiling on enrollment would be exceeded.

Therefore, while presumably there has been no change to date, this addendum was prepared to give some indication of the impact of such a change should it occur. It is entirely possible that the ceiling will not be lifted or that some figure between 25,000 and 34,000 will be selected if a change is made.

While it is not included in this report, a basic/service employee ratio was determined as a part of the Economic Study. This ratio was derived by updating a previously prepared traditional basic/service economic base study which was done as a graduate thesis. The results of this revision was the derivation of a ratio of 1.23 service workers to each base worker. The significance of this ratio is that presumably for each basic job added to the community slightly more than one service job will be created. Therefore the total number of employees added can be estimated if the number of basic employees are known.

The total resident employment (i.e. employees who actually reside in Alachua County; total employment would of course be considerably greater) of the University in 1980 as projected in this report is 11,716. This figure was based on a projection of faculty and academic staff as prepared by the University, which was adjusted to account for non-resident employees, and to which was added estimates of non-academic personnel on the basis of previous ratios between same and the academic personnel. This resident employee count is geared to a student enrollment of 26,000 in 1980. Using the same ratio of resident employment to students, an additional 3,830 resident employees would be added if enrollment were increased to 34,500. (Note: Again total employment would of course be higher since these figures are adjusted to account for only resident employment.)

Assuming a ratio of 1.23 service workers to each base employee, eventually an additional 4,710 service workers would be added. Therefore, the total University employment and supplemental service employment added would total about 8,540.

In addition, the students themselves can account for additional employees in that they introduce money from outside the county into the area, which when spent creates service jobs. The study determined that the expenditures of about 3.26 students were equivalent to one worker. Therefore, should the enrollment be increased to 34,500 it would mean that the equivalent of roughly 2,600 workers would be added to the economy.

The total employment which could potentially be added as a result of an enrollment increase to 34,500 in 1980 would be about 11,140. This is an increase of approximately 20 per cent over the projections in this study. It would also add about 27,300 people to the population forecast for a total of approximately 158,400 in the county by 1980.

This addendum is written to give some indication of the maximum economic effect which would occur should the University of Florida not be limited in its enrollment. The overall study was computed on the basis of the best information then available, which indicated that a ceiling would be maintained. It should be noted that at the time of this writing nothing has been changed from this position; the addendum reflects only a potential increase in enrollment brought about by a report which says the higher figures could be attained. It is believed that the original projections are still valid. However, the alert is sounded for any further definitive shifts in policy which could necessitate revisions of the basic projections included herein.

INTRODUCTION

> "Of first importance in tooling up for land use planning are studies of the structure and vitality of the Urban economy as key considerations in gauging the amount and rate of land development that is likely to occur in a city." (/32/* page 103)

The above quotation from F. Stuart Chapin, Jr. neatly sums up the purpose of this study. Knowledge of the structure and vitality of the Urban economy is the base on which any plan for a given area must be constructed. The economic well-being of an area, as measured primarily by its income producing ability, is the determining factor in the growth or decline of a community. Today's population is very mobile. Economic opportunity sets the pace for community growth as it attracts people to come and stay, or the lack of it forces them to leave.

The purpose of this study is to examine and analyze the economic well being of the Area, to assess its future prospects and to project the size and nature of its growth or decline. The methodology for such study has it's roots in the so called economic base theory, which is briefly explained in the following section.

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* Note: Numbers enclosed in / / refer to reference sources which are listed in the appendix.

SUMMARY

This is a study of the economic structure of Alachua County and the Gainesville Urban Area. This information, together with the other background studies in the Comprehensive Planning series, will provide the base from which the Comprehensive Plan for the Gainesville Urban Area will evolve. There are three major components of the study: employment, population and income.

Employment

The employment of County residents is the basic measure utilized to gauge past and future growth in this study. The 1950 and 1960 Censuses of Population provided the base figures from which further estimates were derived.

☐ The resident employment of Alachua County in 1950, as reported by the Census was 19,480; the 1960 Census reported employment was 26,515.

☐ The Census data, adjusted for changes in classification and for under-enumeration, was 19,948 for 1950 and 27,277 for 1960.

☐ The 1967 total resident employment of the County was estimated at 37,553.

☐ The projected resident employment of the County is as follows:

1975	47,350
1980	53,515

☐ The following is the past and projected future resident employment by major industry groups:

Industry Group	1960	1967	1975	1980
Agriculture, Forestry and Fisheries	2,324	1,066	1,140	1,018
Mining	120	181	219	254
Manufacturing	2,542	3,148	3,799	4,272
Transportation, Communication and Utilities	1,217	1,290	1,477	1,585
Retail Trade	4,376	5,936	7,806	9,275
Wholesale Trade	637	838	1,123	1,273
Finance, Insurance and Real Estate	934	1,488	1,971	2,322

Services	12,124	18,770	23,603	26,265
Local Public Administration	1,068	1,557	2,198	2,705
Construction	1,934	3,279	3,984	4,546
	27,277	37,553	47,320	53,515

Population

Based on the above levels of employment, the following population is forecast:

	1975	1980
Gainesville Urban Area	99,800	115,400
Alachua County	118,950	131,100

Income

The income of the County and the Urban Area was estimated as follows:

Total Personal Income (000's)	1968	1975	1980
Alachua County	$224,074	$339,241	$413,956
Gainesville Urban Area	183,335	299,096	378,296

Average Household Income	1968	1975	1980
Alachua County	7,360	9,111	9,891
Gainesville Urban Area	7,965	9,614	10,287
Rest of the County (Outside the G.U.A.)	5,596	6,771	7,245

II SCOPE OF THE STUDY

The Economic Base Concept

The underlying theory behind the economic base concept is that there are two major productive segments of economy. One segment -- frequently called the base, basic, primary or community supporting segment -- is made up of that part which exports its goods and services to the area lying outside the geographic area under study. Compensation for such goods and services thus brings in "new" money from the outside. The other portion of the economy is generally called service, secondary, non-basic or a similar term. This segment sells its goods and services entirely to the Area under study, thereby generating no new money, but depending on circulation of existing money plus that which has been introduced by the base sector.

In theory then, the base segment is the factor on which economic growth is dependent. The service segment is a dependent variable which will respond proportionately to any growth in the base segment. Therefore, if the future status of the base segment alone can be determined, the size of the total economy can be forecast. In turn, the total size of the community, its demand for land and etc... can be determined.

Generally speaking, an economic base study entails an examination of the community, separating it into its component base and service parts, establishing ratios between same and projecting the base segment -- by actual survey of the plans of component industries making up that segment; by apportionment from the published projections of a larger region of which it is a part; or by whatever means fit the time and budget requirements of the study. Application of the ratios then make it possible to project the whole economy of the region.*

An alternative to this method would be to directly examine, analyze and project each and every productive element of the economy. It must be recognized, however, that none of these units operate in a vacuum, but are inter-related in the total community structure. Ideally, the economy could best be measured by the construction of a gaint accounting system in which all the income and all the production or output of all individual parts would be related to all other components. Such a system has been attempted in a few larger communities with the aid of computers, but this is clearly outside the scope of this study.

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* Basic/Service ratios were not utilized in this study because of the methodology adopted.

Measurement of the Economic Base

Regardless of the method chosen to analyze an area, all have the common need for a unit of measurement. This measurement can be in terms of total payrolls, dollar transactions or value added by manufacturing, but most commonly it is by employment in the various segments of the economic base.

The latter, which will be used in this study, has several advantages. It is subject to ready transfer or translation into some of the desired end products of an economic base study such as population or number of households. It is also the unit for which information is most easily obtained. Many industries are willing to disclose employment but are very sensitive about sales or wage information. In addition there are better sources of published data, particularly since all concerns with more than four employees must report employment under Unemployment Compensation Laws.

Background of the Study

Prior to the beginning of the 701 Comprehensive Planning Studies the Planning Division retained a consulting firm to establish what information could be generated through an economic study which would be of benefit to the greatest number of persons in the community, and to determine what kind of base study could be conducted within the limitations of staff and financing available to the Department.

The consultants, Hamilton, Thomas and Associates /33 / concluded that a standard economic base study would not be justified in this instance. By their definition, standard base studies "seek to identify the primary source of income and employment within a community, and to delineate the relations which these economic activities bear to such larger units as the region and the nation."* The primary sources of income and employment are already known in this community, they concluded, and in addition the character of the base is such that it is dependent on factors "essentially non-economic in character."

The recommendation of the consultants were: one, that a survey and study of population characteristics be made; and two, that a survey of employers to obtain information on employment,. wages and payrolls be taken. Such a survey would not, however, satisfy the planning needs for various sets of projections and future estimates which "are essential for effective planning not only on the part of public officials and agencies, but on the part of merchants, builders and developers, and others in the business community."** Only a system of projections based on an analysis of the community's export base would provide such information. However, they concluded it was clear that the proper approach was not the determination of a single base/service formula but a "studied, cautious analysis of each growth/factor and its effect on the community." Therefore, they recommended a series of special studies which examined such growth factors individually.

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* /33 / page 35
** /33 / page 36

The essential purpose of an economic study in the planning process is to provide a base for projections and estimates on which a future plan can be established. In actuality, a survey of employment and wages would provide most of the necessary data for a traditional economic base study, but might not, as they pointed out, provide a complete understanding of the economic foundation of the community. The special studies, on the other hand, would not provide the definitive link relationship necessary for planning purposes.

It was concluded that a study which could provide a concrete or measurable relationship between the economy of today and the future was essential, but the study should provide a means for including personal examination and analysis of specific growth factors. It was decided to undertake a study based on employment as a measure of the economy, but to survey only the major industries as opposed to a detailed survey of all of them. The major industries could be examined individually and any information on concrete plans for the future could be factored into the projections on a judgment basis.

The method utilized, at least in part, in this study is outlined in a research study conducted by Dr. Louis T. Harmes, Rosella James and Robert Springer of the Bureau of Economic and Business Research of Temple University. That study was prepared under contract with the Office of Manpower Policy, Evaluation and Research, Department of Labor and entitled "Projective Models of Employment By Industry and By Occupation for Small Areas: A Case Study". /3_/

In brief, this study entails adjusting the 1950 Census for changes in classification of employment by industry groups, adjusting the reported totals for underenumeration, and finally, estimating employment for all years from 1950 to 1967 except those adjusted above. The latter task was accomplished by establishing "ratios of trend" between the adjusted census data and the reported data series for which information was available for all the missing years not included in the Census. The census data could then be fitted to such series to approximate the actual development of a given industry. The annual series most widely used was employment reported under the Unemployment Compensation Laws of Florida and by the Florida Industrial Commission.

The reported or "covered" employment data could not be used directly for a number of reasons. The most important is that it is a count of the total number of positions filled by industries located in a given area -- generally called establishment employment -- and not the employment of the residents of a given area. Since it is desired to establish ratios between employment and the number of people living in the area, resident employment was necessary. Futhermore, establishment employment represents not only commuters into the area, but also part-time persons who are on the payroll and persons who may hold more than one job. In addition, not all persons are covered by unemployment compensation laws. Such industries as government and railroads, and all firms with less than four employees are not required to report.

It is assumed, however, that the relative growth or decline of the reported establishment employment would reasonably depict the direction in which a given industry was going and such data was used to adjust the adjusted census resident employment.

Upon completion of an annual estimate of employment of a given industry, an appropriate curve was selected to fit the trend of such industry and projected to the target years of 1975 and 1980. In certain cases where a logical method was available, a second and perhaps even a third projection was made. These were then evaluated and the most appropriate one chosen. One method was to apply a ratio of trend with the published projection for a larger area such as the South, or applied the expected or past rate of growth of the larger area industry to the local industry. In other instances where a very steady growth pattern was evident, the past growth rate formed the basis for another projection.

Adjustments to the Census Data

The 1950 Census provides a point of departure for examining the present day economy of the area. However, before the census figures could be used in the analysis, it was necessary to adjust same for underenumeration and for shifts in the classification of industries. It was possible to adjust for shifts in classification because the 1950 Census figures for employment by various industry groups was recalculated on the basis of 1960 Census definitions and included in the latter reports. As was indicated earlier, the methodology used for such adjustment, in fact the methodology for this portion of the study, was derived from the case study prepared by Harmes, James and Springer. /3/ The following description for the census adjustments are taken directly from that study.

1. "Shifts in Classification of Industries

   The shifts in classification of industries were adjusted by comparing employment by industry in the State for 1950 as shown in the 1960 Census Volumes with the corresponding industry as recorded in the 1950 Census. Comparable County figures were not available. The smaller area industries were multiplied by the State ratios (1950 in 1960 divided by 1950 in 1950) to obtain estimated employment by industry according to 1960 classifications. (See Appendix A)

2. "Underenumeration of Employment

   In both the 1950 and 1960 Censuses, labor force and employment were underenumerated. Rates obtained by comparing census values with the results of a matched sample as shown in the introductory section of the 1950 and 1960 United States summary Census Volumes. The rates were applied to County labor force by ages and to total employment and agricultural and non-agricultural employment. Since the industrial mix of a smaller area is likely

to be quite different from that of the United States, total adjusted labor force by age for the small area was used as a control. The labor force obtained from applying underenumeration rates to unemployment, agricultural employment and non-agricultural employment was adjusted to labor force obtained by multiplying underenumeration rates by labor force by sex and age. Total Census employment by industry was then adjusted upward with the additional adjustment for underenumeration plus industry not reported being spread to each industry in proportion to the number of originally shown in the census after adjustments for shifts in classification." (/3 / page 4) (See Appendix B)

The results of the adjustments to the census data are shown in Appendix Table B-7 for 1950 and B-7A for 1960. There was a net increase after adjustments of 478 employees in 1950 and 762 in 1960. This increase is slightly less than 2.4 percent and 2.9 percent respectively for the census years. The total adjusted resident employment for Alachua County in 1950 was 19,948 and 27,277 in 1960.

Estimated Annual Employment by Industry Group

After the census data was adjusted the next step was to estimate annual employment for the missing years between the census dates and for the period since 1960. Annual estimates were desired to avoid projecting on the basis of only two census years. The latter is quite likely to be incorrect if either date happened to occur at a peak or trough in the business cycle. For example, if the 1950 data was obtained in a low employment or trough period, and 1960 in a peak year, it is likely that a projection based on that data would show an upward direction, when in fact the industry may have a level employment profile or even be declining.

Annual employment was estimated by establishing a ratio of trend between the census years and corresponding years for some other annual data series for the same industry group. The series primarily used was the reported coverage under the unemployment compensation laws. A basic assumption in this methodology is that the general direction of change in the resident employment will follow that which is reported in the establishment or other series data. As an example of how the adjusted census data tracks the annual series data, both have been included on some of the charts in following sections. (For example, Charts XIII & XIV)

The actual ratios were computed by dividing Alachua County's adjusted census data by the corresponding dates in the annual series. Then one tenth of the difference between the 1950 and 1960 ratios was added to (or subtracted from) the 1950 ratio to obtain the ratio for 1951 and so on for each succeeding year. A more detailed explanation of the process can be found in Appendix B, or by consulting the original model /3 / for this work.

The census tables, which are based on the responses to a survey of residents,

include self-employed and certain unpaid family workers who would not normally be included in most other employment counts. Therefore, in order to make the two sets of data more comparable, the estimated self-employed and unpaid family workers were first deducted from the census totals for those industries where their number constituted ten percent (10%) or more of the total in that category. These were then projected separately and added to the remaining adjusted data. An explanation of the methodology and sample tables of the results are included in Appendix C. The results of the annual estimates are shown in Table I.

Choice of Study Area: Alachua County

The Hamilton - Thomas research monograph outlined four possible study areas, noting that the specific choice of any one would have to be tailored to the study to be undertaken. These areas were: the City Limits, Metropolitan Gainesville, the County Line (which incidentally was the most frequent choice of the community leaders interviewed in the study) and the total regional trade area. The most desirable geographic area for planning purposes would naturally have been the urbanizing area of Metropolitan Gainesville, as that is basically the area which will be considered in the plan. Unfortunately such area is not a Standard Metropolitan Statistical Area, hence no statistics are available on that base.

Realistically there are two basic factors which had to be considered in choosing a study area: one, the area should be large enough to encompass not only the present urban complex, but accommodate the expected growth of the future; and two, if a generalized economic analysis was to be conducted based on existing current data sources, those sources would dictate the area to be used. The County was the only logical choice for the study area because it is the basis for almost all data used in the analysis.

This is not to say that the same area might not have been chosen otherwise, for in many ways the County forms a more logical economic unit than the City of Gainesville or the Gainesville Urban Area. Basic employment for the whole County, and not just the Urban Area, centers around Gainesville. This produces an economic interdependence which surpasses the smaller area. In 1964 Edgar D. Cook, Jr. presented a thesis to the Graduate Council of University of Florida entitled "An Economic Base Study of the Metropolitan Area of Gainesville, Florida" /13 / In this thesis, Cook, after considerable deliberation, delineated a geographic area which encompassed all but a small southern part of the County. /13 / In addition, certain important factors, particularly the General Electric Plant at Hague and most of the agricultural production have their base outside the Urban Area, but are within the County. Finally, Urban Gainesville dominantes the County economically, but the overall economic influence of the area does not extend greatly beyond the County border except perhaps for certain segments, such as retailing. Thus a study based on the County area will encompass most economic factors important to Gainesville now and in the near future, and at the same time will not seriously inflate the statistical measures of which Gainesville is the predominant part.

TABLE I

ESTIMATED ANNUAL RESIDENT EMPLOYMENT, ALACHUA COUNTY
1950-1967

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Agriculture, Forestry & Fisheries	4,548	4,222	3,943	3,685	3,568	3,339	3,037	2,839	2,650	2,527	2,324	2,194	2,001	1,888	1,648	1,443	1,377	1,066
Mining	42	51	60	65	72	76	85	97	102	108	120	116	117	129	144	158	169	181
Transportation, Communications and Public Utilities	992	1,039	1,062	1,076	1,075	1,106	1,136	1,164	1,194	1,191	1,217	1,197	1,173	1,160	1,174	1,197	1,244	1,290
Public Utilities	148	161	165	181	188	194	199	210	227	246	259	254	252	260	260	269	285	295
Railroads & Railway Express	421	432	417	401	379	374	358	322	278	253	234	220	206	174	167	153	143	140
Trucking Service & Wholesale	60	69	74	77	81	92	102	108	109	120	127	125	132	135	139	142	153	160
Other Transportation	157	164	168	168	167	174	186	192	186	188	187	182	172	174	179	183	184	187
Communications	206	213	238	249	260	272	297	332	394	384	410	416	411	417	429	450	479	508
Retail Trade	2,967	3,235	3,297	3,327	3,486	3,734	3,893	3,876	4,016	4,345	4,376	4,557	4,473	4,816	4,993	5,264	5,750	5,936
Food and Dairy Products	525	511	561	534	608	631	759	717	655	742	765	802	840	874	932	1,045	1,466	1,366
Eating and Drinking Places	618	538	518	558	621	694	673	710	682	751	785	857	821	903	1,026	1,055	1,306	1,557
Other Retail Trade	1,824	2,186	2,218	2,235	2,257	2,409	2,391	2,449	2,679	2,852	2,826	2,898	2,912	3,039	3,035	3,164	2,978	3,413
Wholesale Trade	396	487	483	537	506	529	568	600	576	614	637	730	738	783	974	1,314	865	838
Finance, Insurance, & Real Estate	424	395	400	453	500	588	693	745	814	913	934	1,007	1,187	1,348	1,329	1,315	1,356	1,488
Services	6,872	7,612	7,244	8,195	8,331	9,102	9,957	10,569	10,906	11,780	12,124	12,873	14,278	15,104	15,645	16,285	17,147	18,770
Private Households	1,171	1,293	1,165	1,315	1,242	1,427	1,621	1,742	1,776	1,896	1,844	2,109	2,126	2,045	1,995	1,885	1,678	1,603
All Other Services	2,342	2,681	2,162	2,684	2,614	2,921	3,303	3,515	3,539	4,014	4,130	4,478	5,145	5,586	5,856	6,337	6,961	8,136
Education Services	3,359	3,638	3,917	4,196	4,475	4,754	5,033	5,312	5,591	5,870	6,150	6,286	7,007	7,473	7,794	8,001	8,508	9,031
Local Public Administration	623	623	672	710	724	769	839	901	957	1,007	1,068	1,109	1,172	1,228	1,292	1,373	1,475	1,557
Construction	1,489	1,334	1,010	1,100	1,333	2,135	2,141	2,369	2,312	2,207	1,934	2,208	2,217	2,565	2,756	3,184	3,499	3,279
Manufacturing	1,595	1,850	2,001	2,379	2,111	2,247	2,065	2,185	2,139	2,545	2,542	2,484	2,706	2,776	2,820	2,661	3,143	3,148
Food and Kindred Products	268	368	295	541	504	561	536	552	591	687	663	726	718	757	790	781	722	758
Furniture, Lumber and Wood Products	876	960	983	1,112	906	841	741	643	468	584	574	520	530	549	557	457	566	585
Electrical Equipment, Machinery	3	--	--	--	--	17	131	238	370	505	518	524	600	655	602	458	862	892
Other Manufacturing	448	522	623	726	701	828	657	752	710	769	787	714	858	815	871	965	993	913
Total	19,948	20,848	20,172	21,527	21,706	23,625	24,414	25,345	25,666	27,237	27,276	28,475	30,062	31,797	32,775	34,194	36,025	37,553

Source: Planning Division Estimates.

Commuters

Statistics from sources other than the census frequently report much higher employment than does the census. As mentioned earlier, this is primarily due to the fact that the census is based on resident vs. the establishment employment of other sources. When establishment employment is higher it generally is because it is a count of all people who work in a particular geographic place or particular establishment irrespective of where that persons may live. Thus it includes commuters. But since establishment employment also counts persons with two jobs it is impossible to gauge the exact number of people who commute into the County to work.

Alachua County is an employment center with a considerable number of its workers living outside the County. One official estimated that as high as 30 percent of his 1,100 workers lived outside the County. The following table indicates the extent to which surrounding county workers commute outside their counties for employment.

Of the seven counties Alachua has the largest percentage of residents working inside its borders, followed by Columbia and Marion Counties. Altogether there are at least 3,885 workers in the other six counties who do not work in the same county in which they reside. Bradford leads in this respect with over 1,100 out of only 4,000 workers commuting to the outside. Unquestionably a good portion of these come into the Gainesville Area for their employment. It is believed that many of these are employees of Sunland who live in Starke. Less than three percent (3%) of Alachua's workers reported a place of employment outside the County, while the other counties ranged from five to thirty percent (5% - 30%).

TABLE II

PLACE OF WORK, ALACHUA AND SURROUNDING COUNTIES
1960

County	Total Number of Workers	Worked in County of Residence	Worked Outside County of Residence	Place of Work Not Reported
Alachua	25,790	24,203	716	871
Bradford	4,001	2,730	1,171	100
Columbia	7,056	6,460	372	224
Levy	3,585	3,020	367	198
Marion	17,630	16,007	969	654
Putnam	10,474	9,537	587	350
Union	1,383	947	419	17
Total Excluding Alachua	44,129	38,701	3,885	1,543
			Percent	
Alachua	100.00	93.84	2.78	3.38
Bradford	100.00	68.23	29.27	2.50
Columbia	100.00	91.55	5.27	3.18
Levy	100.00	84.24	10.24	5.52
Marion	100.00	90.79	5.50	3.71
Putnam	100.00	91.05	5.60	3.34
Union	100.00	68.47	30.30	1.23

Source: (2)

PART III HISTORICAL DEVELOPMENT OF THE ECONOMIC BASE

The economic history of Gainesville and Alachua County does not differ greatly from that of the Nation as a whole. Basically it is one of gradual movement from a rural to an urban-based economic structure. Only the speed with which this transition has taken place and the source of the primary or basic employment varies significantly from one area to another. The following sections outline the economic history of Gainesville and Alachua County from its inception to World War II. The primary source for this whole section is Hildreth's excellent book "A History of Gainesville, Florida" /20/. Specific references to facts are from this source unless otherwise noted.

From its beginning until after World War II the economy of Gainesville and Alachua County was anchored to agriculture. According to the Eighth Census, as reported by Hildreth, Alachua County had 45,934 acres under cultivation in 1860, produced 21,474 bales of cotton; had $394,890 worth of livestock, and was second to only one other county in the state in the number of milk cows; second in the number of sheep -- but first in the total pounds of wool sold, and was exceeded in the number of hogs produced by only four (4) other counties in the state.

Fertile fields alone could not and would not have guaranteed the flourishing growth of Gainesville and environs. Produce had to be shipped to market, and the factor that most assured prosperity to this area was the coming of the railroad. Hildreth stated:

> "The coming of the railroad brought about the town's first business boom. Gainesville was no longer an isolated settlement in the interior of the State. The railroad line provided easy access to the Gulf and Atlantic Coasts and to the shipping facilities of both the port of Cedar Key and Fernandina."

The railroad referred to was one of Florida's first. One of its principal backers was Senator David T. Yulee who saw it as a short cut connection across the Florida pennisular for boat traffic between New York and New Orleans. Part of the line was destroyed during the Civil War but was restored shortly thereafter. During the railroad boom of the 1880's it was joined by other tracks running north and south, thus preserving Gainesville's position as the principal marketing place for a wide agricultural region.

As the principal shipping point for the agricultural products the effect of the railroad on Gainesville was predictable. By 1865 the town had fifteen retailers, twice the prewar number. By 1867 this number had increased to thirty. One firm,

owned by George Savange and Edward Haile purchased almost the entire cotton crop grown in the state immediately after the war. Rain and an invasion of caterpillers ruined the entire crop in 1867. It hit the livestock industry whose grazing lands were flooded. The setback, although severe, was temporary. By 1880 things were moving again but a severe freeze took most of the now diversified crop.

Despite these setbacks Gainesville never-the-less continued to prosper. It had achieved a reputation as one of the "healthest" cities in the country and was beginning to attract people from other parts of the country. Fifty new buildings were constructed between 1880 and 1882. There were five (5) hotels in town, two of which served the tourists and closed during the off season. The H. F. Dutton Company constructed a new ginning mill in 1882 which handled an estimated one quarter of all the cotton in the state and paid out more than $600,000. to planters in the area. The mill had as many as 60 workers and shipped to such far away ports as England and Egypt. By 1903 Dutton had 26 gins and was employing as many as 100 workers. Cotton remained king of agriculture until 1916-1918 when it was hit by boll weevils and destroyed.

In 1882 James Doig established a foundry and machine works which employed 60 people. A new ice plant was established in 1885, and in 1886 a new fertilizer plant was opened with great success. Truck crops were being planted in increasing magnitude. By 1904 the Gainesville Melon Association was shipping 130 carloads of melons. Strawberries were particularly successful. By 1886 an average of 10,000 quarts per day were shipped.

Oranges, which are such a vital part of Florida's economy were also important to the county in one period ending at the turn of the century. In this period trees were planted everywhere for the "Orange Gold". Even the old oaks around the courthouse square were removed in 1882 to make way for orange trees. In 1886 a serious but not fatal freeze hit the groves. Another hit in 1894/95 with damage to many trees, but in 1899 the replaced stock from earlier freezes was hit by a severe freeze which killed almost all the trees, and citrus never again played an important part in the economy of Alachua County.

Another resource was tapped in the period of 1870-1920 seriously rivaling, but never quite surpassing agriculture as the primary economic base of the area. In 1881 phosphate was discovered only one mile from the City Limits. Ten years later Henry F. Dutton established a company which, with consolidations and growth, made Gainesville the center of phosphate industry in the State of Florida. Thousands of dollars in wages were poured into Gainesville as the chief trading center for the phosphate workers in Alachua and Levy County. With the coming of World War I, Germany, which was the chief customer for phosphate, was shut off. In addition, the beds began playing out and phosphate faded as a significant industry. Its demise coincided with the death of cotton from the boll weevil, making it a serious blow to the area.

With the 1920's came the Florida boom in land speculation. It did not reach

Gainesville until late 1925 and consequently the City was less affected than other parts of Florida. Perhaps the most conspicious sign of the boom in the area was the start of the 10 story "Dixie Hotel" conceived as a grand hotel for Gainesville by W. McKey Kelly, who had amassed a fortune in the Tampa area from land speculation. He was unable to complete his scheme because of the collapse of the boom. It was finally completed during the depression with Federal Assistance and a donation from Georgia A. Seagle.

All things considered, Gainesville and Alachua County did not suffer too badly from the crash as it still was primarily an agriculturally based service center, and by then the established University of Florida was providing monthly payrolls amounting to as much as $100,000 in 1935. Federal Assistance projects were also used to bolster the economy in the depression years. In addition to completion of the Seagle Building the local airport was constructed with CWA assistance as well as numerous other public works projects. It was estimated that 40,000 man hours and $18,874. in payroll were used in the last week of December, 1933.

Before World War I, forest products had been established as another basic industry. A plant to distill turpentine and other products, a cooperage (barrel making) plant and a $500,000. creasote plant were all in operation. By 1936 there were 14 turpentine mills employing an estimated 1,000 workers, with an annual product worth an estimated $360,000. Adkins Manufacturing Company had 170 employees and Retort Chemicals had 55.

One of the largest industries, however, was production of tung oil. Tung trees from China were first planted in 1922 and by 1930 a modern extractor mill was located in Gainesville. Ultimately it became the producer of as much as 90 percent of all domestic tung oil, with shipments sent all around the World. The oil is still produced here although many of the groves were moved to the Florida Panhandle area.

During the war years, Gainesville, like everywhere else, was geared to economic factors brought about by the war. Camp Blanding just north of Alachua County was the training base for 25,000 men. In addition to the many men who came to the City on weekends, many officers moved their families to Gainesville. Also the airport was turned over to the Army for training of pilots, and many service men received training at the University. Agriculture continued to be important to the economy with $20 million in products in 1945. The largest crop was peanuts ($3.85 million) with livestock ($3.47 million) and other vegetables ($3.9 million) following.

After the war, the economic base shifted away from its reliance on agriculture. The latter was supplanted by a far more significant economic force -- the University of Florida. In 1940 it was estimated that approximately 3,000 students were enrolled at the University. With the end of the war, returning veterans armed with the G. I. Bill, swarmed to the campus and by 1950 enrollment numbered almost 10,000.

The University was not new to the area. During the depression it had provided some sort of employment to as many as 1,000 people. Actually the forerunner of the University was established in December, 1857 when the county officials deeded a block of property to a group of local citizens for the establishment of an "academy". The price was $5.00 and the new head of this institution was J.H. Roper. After the Civil War the academy was placed in the hands of the State and became East Florida Seminary.

The school burned down in 1883 and was rebuilt in 1884 with modern brick construction. The building stills stands as Epworth Hall, now owned by First Methodist Church. Just prior to the fire a "normal" course for training teachers had been instituted, transforming what had been primarily a local institution into a college with students from outside the area.

In 1905 the state had eight institutions of higher learning. Reorganization and consolidation was deemed desirable. A bill was passed by the Legislature creating a Florida Female College for girls, the University of the State of Florida for white males and retaining Florida Normal and Technical (Florida A and M) for Negro students. A spirited competition ensued for the location of these institutions. Eventually the choice for the University was narrowed to Gainesville and Lake City. Gainesville won out with a bid of $40,000 in financial assistance; choice of 500 acres west of town; or another site of 350 west plus 15 acres east of town; an offer to buy the old seminary buildings for $30,000; and an offer to furnish free water to the new institution. Forty-five years later the wisdom of this move was confirmed as the University became the bulwark of the City and surrounding areas' economy.

In the 1950 Master Guide Plan prepared by Churchill-Fulmer Associates, it was concluded that fully three-quarters of the basic economic support for Gainesville was provided by the University. The principal source of basic employment which exists today was thus established. Its growth from this point along with an examination of all major sources of employment, will be detailed in later sections of this report.

Conclusion:

Perhaps the two most significant years in the economic history of this area was 1859 and 1905. In the former the railroad linking Gainesville with the east coast was completed, and in the latter the City was chosen as the location for the University of Florida.

With completion of the railroad Gainesville became a significant market and service center for a broad agricultural region. This agricultural resource remained the primary economic base for the area until after World War II. It was not the only resource, however, and at one time or another tung oil production, tourism, phosphate mining, and processing of wood products played significant roles in the economy. Even agriculture varied in its principal crop over the years, first with cotton, then oranges, field crops, livestock and even peanuts either dominating or playing a major role in the economy.

Throughout this whole period the University or its predecessor existed, slowly growing in size and importance until it came to dominate the economy of Gainesville and wider outlying regions. It remains today as the single largest force in the economy. Other significant factors have come into the picture in recent years with basic employment provided by the new Veteran's Hospital, Sperry Tube and General Electric. These and all major components of the economy, as measured by employment, will be discussed in subsequent sections of this report.

PART IV. DEVELOPMENT OF THE PRESENT ECONOMY: 1950 TO THE PRESENT

The modern day expansion of the economy could be tied to the ending of World War II when the returning veterans, armed with the G. I. Bill, flooded campuses across the nation including the University of Florida. In 1940 enrollment at the University stood at slightly over 3,000. By 1950 it had increased to about 10, 000. Growth of the City of Gainesville and surrounding area was consequently stimulated and has continued to the present.

Alachua County gained resident employment at a much faster rate than did the nation as a whole in the decade of the 1950's. This growth rate, however, was far below that of the state. In 1950 the resident employment, based on adjusted census data was 19,948. By 1960 this total had grown by 7,329 to 27,277 for an increase of 36.7 percent. It is estimated that employment from 1960 to 1967 had increased an additional 38 percent to a total of 37,553. This is a total increase for 1950-1967 period of approximately 88 percent.

By contrast, the growth in employment for the United States during the period 1950 to 1960 was only 13.67 percent. Florida however, increased by 52.5 percent for the same period. This is an annual growth rate of approximately 1.3, 4.3 and 3.1 percent for the Nation, Florida and Alachua County respectively. Thus while the county has experienced a growth rate greater than the country as a whole, it has not kept pace with the tremendous growth experienced by the state.

This lag could be attributed to a number of significant differences in the economics of the county and the state. Basically the county's growth in the 50's was attributed to the growth of the University while numerous other forces were at work in the state. Retirement, tourist and space activities are inducing growth in other areas not equally shared by this county.

The "services" industry group, which includes most of the University employment increased by 71.4 percent during this period while the state grew by only 56.5 percent and the nation by 36.9 percent. At the same time manufacturing in the state, much of which was stimulated by the space efforts centered around Cape Kennedy, grew by almost 100 percent as contrasted with Alachua's 59.4 percent. These two industry groups, i.e. services for the county and manufacturing for the state, were the largest gainers in absolute numbers for the respective areas. However, as a major category services is also the largest employer classification for the state too. The following table, Table III and Chart I shows the percentage change by major industry group for the United States, Florida and Alachua County. Actual increases in numbers by smaller industry breakdowns may be found in Table V.

TABLE III

PERCENTAGE CHANGE IN RESIDENT EMPLOYMENT BY MAJOR INDUSTRY GROUP, ALACHUA COUNTY, FLORIDA AND THE UNITED STATES 1950-1960

Industry Group	Alachua County	Florida	United States
Agriculture, Forestry & Fisheries	-48.90	-18.73	-35.68
Mining	185.71	50.34	-27.77
Manufacturing	59.37	99.04	22.08
Transportation, Communications and Utilities	22.68	60.09	2.75
Retail Trade	47.49	50.65	14.67
Wholesale Trade	60.86	35.22	15.42
Finance, Insurance & Real Estate	120.28	120.66	43.48
Services	76.43	56.52	36.92
Public Administration	71.43	68.43	30.43
Construction	29.89	78.74	13.42
All Industries	36.73	52.51	13.67
Average annual rate of growth (%) 1950-1960	1.3	4.3	3.1

Source: Table I for Alachua County, Florida the 1950 /1/ and 1960 /2/ Census reported resident employment was adjusted per the methodology of this study by the Planning Division, and Table II /3/ for the United States.

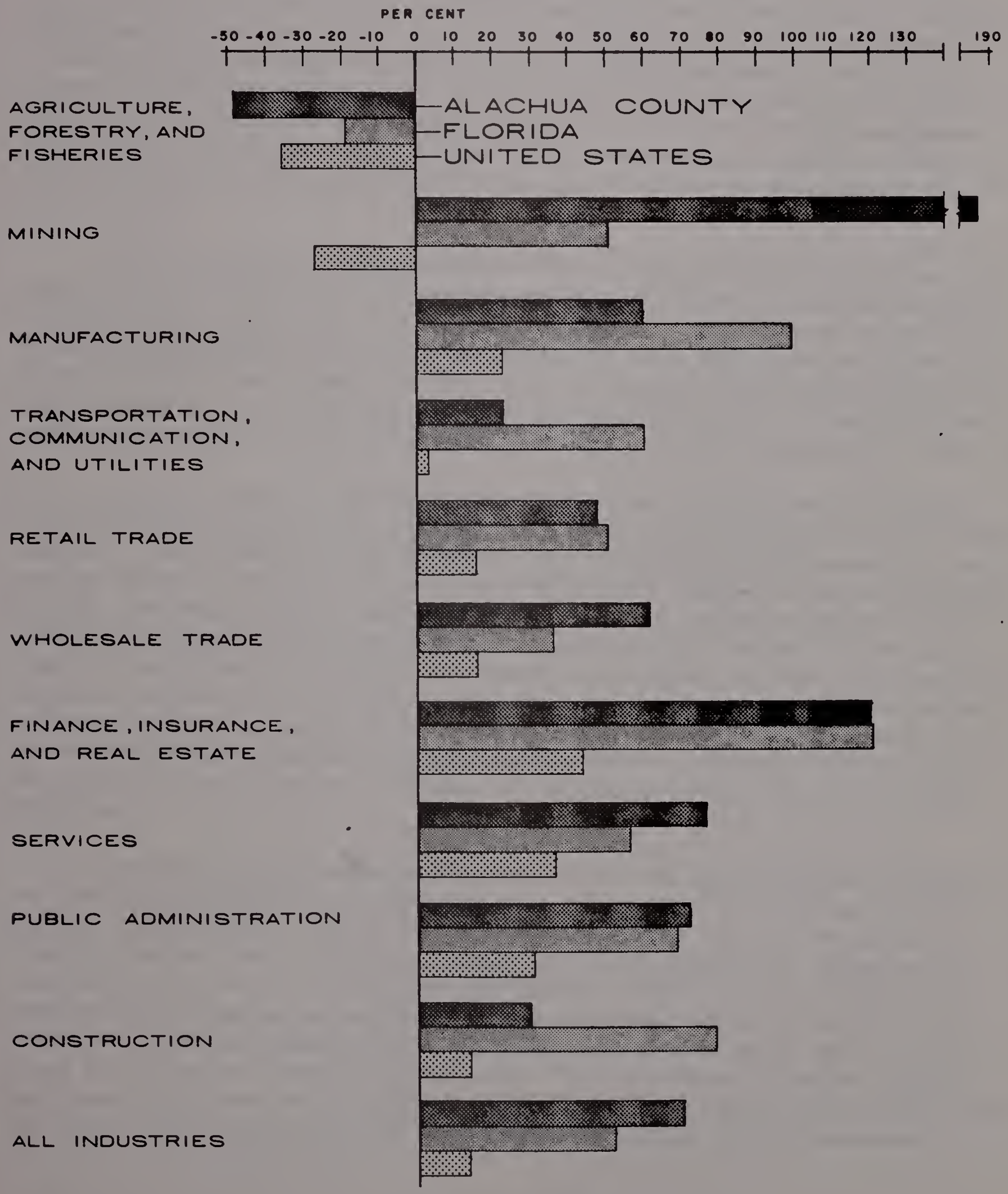
The county experienced larger increases than did the nation as a whole for all major industry groups except agriculture, forestry and fisheries. It exceeded the state in mining, wholesale trade, services and public administration. The largest percentage increases were in these same categories with the addition of finance, insurance and real estate which was the second highest industry group. It should be noted that mining, which had the largest increase, is really quite insignificant to the total employment picture with only 120 employees in 1960.

CHART I

CHANGE IN EMPLOYMENT BY MAJOR INDUSTRY GROUP

ALACHUA COUNTY, FLORIDA, AND UNITED STATES

1950 — 1960



SOURCE: TABLE 3

PART V. COMPOSITION OF RESIDENT EMPLOYMENT

Florida is not a typical state compared with the United States in terms of composition of its resident employment, nor is Alachua County similar to the State of Florida. The biggest economic force in Florida is tourism, which shows up insofar as employment is concerned in the industry group services, which includes employees in entertainment, recreation and motels and hotels, and in retail trade, which among other groups includes employment in eating and drinking places. In addition, Florida has a higher percentage of the resident employment force in transportation, communication and public utilities, and in construction, reflecting perhaps both the tourist business and the far greater growth rate of the State.

The only significant major category in which the State lags behind the nation is in manufacturing. This is an important difference because employment in manufacturing has traditionally led to higher wage and income structures for an area. Futhermore, the manufacturing which the state does have is primarily in the lower paying food and kindred products processing. There are signs that the picture is changing in that manufacturing is one of the industry groups showing great improvement in the last decade. As a percent of the total resident employment it increased from about 10.9 to 14.2 in the period from 1950 to 1960.

If any one industry group dominants the employment force of an area, it logically follows that percentagewise, the remaining groups will be smaller than the average or typical work force. Such is the case with Alachua County, which has about 44 percent of all resident employment in the single category "services" in 1960. This was ten percent higher than in 1950. The reason for the dominance of services is not tourism, as was the case with the State, but the classification of education as a service function. The major industry of the County -- the University of Florida -- is classified in this group. In terms of the traditional economic base theory the University is a base employer, and its growth stimulates the non-base sector of the economy, many of the employees of which would also be included in the service group in such industries as private household workers, professional services and etc.. Thus the industry group "services" is doubly inflated as a percentage of the total resident work force.

A breakdown of the resident employment of the United States, the State of Florida and Alachua County for 1950 and 1960 is given in Table IV, and is shown graphically in Chart II. Certain trends in employment are shared by all three areas. For example, all show a decided decline in agriculture, forestry and fisheries employment. Manufacturing captured a greater share of the employees in all areas in 1960 than it did in 1950, but the extent of this increase was greater for the State than the other two areas. Only Florida showed an increase in transportation, communications and utilities group, while most other groups showed modest increases across the board. Finally, in Table V. both the estimated employment and a percentage breakdown is shown for Alachua County for 1950, 1955, 1960, and 1967. The following section will discuss the industry groups in detail preparatory to projecting same to 1975 and 1980.

TABLE IV

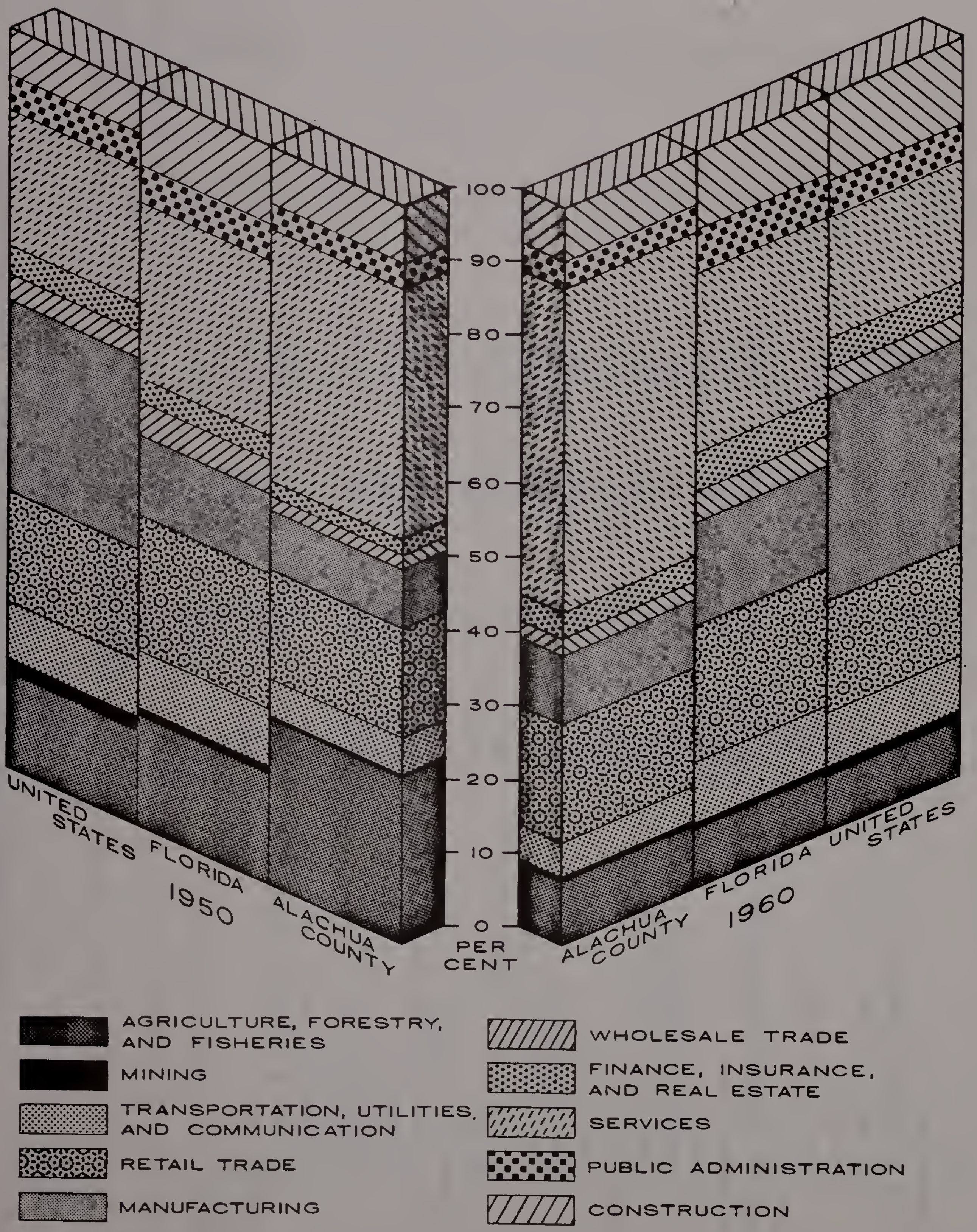
RESIDENT EMPLOYMENT COMPOSITION BY MAJOR INDUSTRY GROUP ALACHUA COUNTY, FLORIDA AND THE UNITED STATES 1950 and 1960

	Percent of Total, 1950			Percent of Total, 1960		
Industry Group	Alachua County	Florida	United States	Alachua County	Florida	United States
Agriculture, Forestry & Fisheries	22.8	15.7	13.8	8.5	8.3	7.8
Mining	0.2	0.5	1.6	0.4	0.5	1.1
Manufacturing	8.0	10.9	26.0	9.3	14.2	27.9
Transportation, Communications & Utilities	5.0	7.9	7.9	4.5	8.3	7.1
Retail Trade	14.9	18.6	15.2	16.1	18.4	15.3
Wholesale Trade	2.0	4.8	3.5	2.3	4.2	3.5
Finance, Insurance & Real Estate	2.1	3.7	3.4	3.4	5.4	4.3
Services	34.4	23.8	18.1	44.5	24.4	21.8
Public Administration	3.1	5.1	4.5	3.9	5.7	5.1
Construction	7.5	9.0	6.1	7.1	10.6	6.1
	100.0	100.0	100.0	100.0	100.0	100.0

Source: Appendix B. Note: Florida total were adjusted for underenumeration and industry not reported but not for changes in classification, hence the actual percentages may vary slightly from those shown; U. S. percentages were derived from (3).

CHART II

COMPOSITION OF RESIDENT EMPLOYMENT BY MAJOR INDUSTRY GROUP ALACHUA COUNTY, FLORIDA, AND UNITED STATES 1950 - 1960



SOURCE: PLANNING DIVISION ESTIMATES

TABLE V

RESIDENT EMPLOYMENT BY MAJOR INDUSTRY GROUP, ALACHUA COUNTY
1950, 1955, 1960 & 1967

	Number of Employees				Percent of Total			
	1950	1955	1960	1967	1950	1955	1960	1967
Agriculture, Forestry & Fisheries	4,548	3,339	2,324	1,066	22.80	14.24	8.52	2.41
Mining	42	76	120	181	.21	.32	.44	.48
Manufacturing	(1,595)	(2,247)	(2,542)	(3,148)	(8.00)	(9.59)	(9.32)	(8.38)
Furniture & Lumber & Wood Products	876	841	574	585	5.49	3.59	2.10	1.56
Electrical Machinery, Equipment & Supplies	3	17	518	892	.02	.07	1.90	2.37
Food & Kindred Products	268	561	663	758	1.68	2.39	2.43	2.02
All Others	448	828	787	913	2.81	3.34	2.89	2.43
Transportation, Communications & Other Public Utilities	(992)	(1,106)	(1,217)	(1,290)	(4.97)	(4.72)	(4.47)	(3.44)
Utilities	148	194	259	295	.74	.83	.95	.79
Railroad & Railway Express Service	421	374	234	140	2.11	1.60	.86	.37
Trucking Service & Warehousing	60	92	127	160	.30	.39	.47	.43
Other Transportation	157	174	187	187	.74	.74	.69	.50
Communications	206	272	410	503	1.16	1.16	1.50	1.35
Retail Trade	(2,967)	(3,550)	(4,376)	(5,936)	(14.87)	(15.14)	(16.04)	(15.81)
Food & Dairy Products Stores	525	631	765	1,366	2.63	2.69	2.80	3.64
Eating & Drinking Places	618	694	785	1,557	3.10	2.96	2.88	4.15
Other	1,824	2,225	2,826	3,013	9.14	9.49	10.36	8.02
Wholesale Trade	396	529	637	838	1.99	2.58	2.34	2.23
Finance, Insurance & Real Estate	424	588	934	1,488	2.13	2.51	3.47	3.96
Services	(6,872)	(9,102)	(12,124)	(18,770)	(34.45)	(38.83)	(44.44)	(49.98)
Private Households	1,171	1,427	1,841	1,603	5.87	6.09	6.75	4.27
Education	3,359	4,754	6,150	9,031	16.84	20.28	22.55	24.05
All Other Services	2,342	2,921	4,130	8,436		12.46		21.66
Local Public Administration	623	769	1,068	1,557	3.12	3.28	3.92	4.15
Construction	1,489	2,135	1,934	3,279	7.46	9.11	7.09	8.73
Total	19,948	23,441	27,277	37,553	100.00	100.00	100.00	100.00

Source: Planning Division Estimates. Note: Values enclosed by parenthesis ( ) are sub-totals.

Agriculture, Forestry and Fisheries

The population of Alachua County, as in most parts of the country, is becoming more and more urban. Farm population and employment has declined while at the same time agriculture has constantly increased its capacity to produce and to adopt to innovative technological change. This has led to increasing yields from farms, making it possible for fewer people to produce all necessary agricultural products. This fact is clearly demonstrated by the employment in agriculture, forestry and fisheries as recorded in the 1950 and 1960 Census for Alachua County.

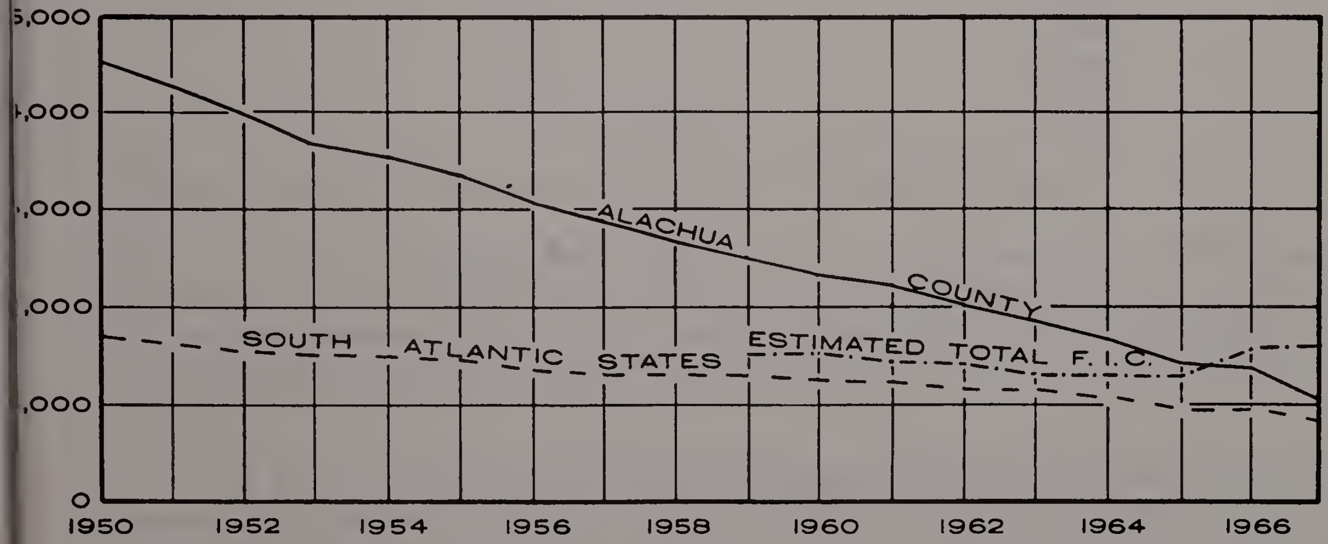
The adjusted total census employment in agriculture, forestry and fisheries in 1950 was 4,548 - the largest single major category with 22.8 percent of all employees of the County. Of these only 376 were actually forestry and fisheries employees with the rest, and by far the largest number in agriculture. By 1960 this category of employees numbered only 72 and 2,292 respectively, (as adjusted) for a total of only 2,324 employees. This represented a decrease of nearly 50 percent during the ten year period.

Since farm labor is not included in the covered employees data to any significant degree, several other sources were examined to secure a better overall picture of agriculture in the economy today. One source included the annual reported employment for South Atlantic States as reported in Agriculture Statistics /15 /. This data was broken down into total employment, family employment and hired labor. The total employment was utilized to interpolate, by ratio of trend, the annual employment for Alachua County.

CHART III

ESTIMATED ANNUAL EMPLOYMENT
IN AGRICULTURE

ALACHUA COUNTY AND SOUTH ATLANTIC STATES
1950 - 1967



SOURCE: ALACHUA COUNTY RATIO FROM PLANNING DIVISION ESTIMATES, SOUTH ATLANTIC STATES [15], ESTIMATED TOTAL F. I. C. [12]

1. INCLUDES FORESTRY AND FISHERIES

The results are included in Table I and shown on Chart III. The picture is one of an almost unchecked downward slide with less than 1,100 workers estimated for 1967. The local County Agents Office did not agree with the figure derived by this method. They pointed out that with an estimated 1,170 farms in the County (the 1964 Census reported 1,041) there would have to be almost as many employers, not counting hired hands. They also speculated that the greatest period of consolidation of farms had peaked prior to 1964. Finally, it was definitely the feeling of the representative interviewed that farm employment had or very nearly had "bottomed out". While they concluded that it was possible that further jobs could be lost to mechanization, it was the feeling that the loss would not be great.

The Florida Industrial Commission also reports a somewhat different picture - both in terms of amount of employment and direction in which such employment headed. In their Basic Labor Market Information releases, which contains estimates for the total labor force, they reported the following form from 1950 to 1967:

TABLE VI

ESTIMATED TOTAL COVERED AGRICULTURAL EMPLOYMENT
ALACHUA COUNTY
1959-1967

Year	Employment
1959	1,500
1960	1,500
1961	1,400
1962	1,400
1963	1,300
1964	1,300
1965	1,300
1966	1,580
1967 (provisional)	1,580

Source: Research and Statistics Division, Florida Industrial Commission

Since the 1,500 employment figure shown for 1960 is less than the 1,911 figure (before adjustment) as reported in the census, it would seem that this series represents a conservative estimate, at least in total numbers. Never-the-less the trend from the census was definitely downward and if the above totals were achieved a rather significant reverse was experienced.

It is also interesting to note that the estimated employment includes a small increase in the past couple of years. Such an increase is contrary to the very general decline in farm workers throughout the country. The U. S. total farm employment dropped from 9,926,000 in 1950 to 5,151,000 in 1966. The family farm employment similarly

dropped from 7,597,000 to 4,011,000 during this period. The total employment in the South Atlantic States showed a decline from 1.24 million to 0.97 million total workers. Florida, however, has had somewhat different pattern as indicated by Table VII. The state's total farm employment increased while the other areas examined decreased. This increase was in large part a result of the employment of more hired labor, which almost doubled in the ten year period. Family employment, which includes farm operators and unpaid family members who worked 15 or more hours in the survey week, declined by 25 percent in the same period.

TABLE VII

FARM EMPLOYMENT FOR FLORIDA, THE SOUTH ATLANTIC STATES AND THE UNITED STATES 1960-1966
(In Thousands)

	FLORIDA			SOUTH ATLANTIC STATES			UNITED STATES		
Year	Total	Family	Hired	Total	Family	Hired	Total	Family	Hired
1960	98	46	52	1,240	885	355	7,057	5,172	1,885
1961	104	46	58	1,222	856	366	6,919	5,029	1,890
1962	122	44	77	1,166	796	370	6,700	4,873	1,827
1963	121	44	77	1,153	777	376	6,518	4,738	1,780
1964	120	43	77	1,057	714	343	6,110	4,506	1,640
1965	121	41	80	975	649	326	5,610	4,128	1,482
1966	N/A	N/A	N/A	983	704	279	5,214	3,854	1,360
1967	N/A	N/A	N/A	806	548	258	4,903	3,650	1,253

Source: /15_/ and /35_/

While the decline in family employment is in keeping with the general trend experienced throughout the country, it is believed that the increase in hired labor can in part be attributed to this same trend in an indirect way. The decline in family owned and operated farms has resulted in an increase in larger, consolidated commercial farms. The larger farms are a more mechanized form of farm operation, resulting in the need for both more hired labor, as well as more skilled labor. It also reflects the ability of the larger farm to pay for such labor.

The above trend can be observed in Alachua County, but to a lesser degree. The number of hired workers, those who worked on farms for at least 150 days in the year, increased from 417 in 1959 to 482 in 1964 according to the census of agriculture. The number of farms employing such labor increased from 141 to 174 during the same period. In addition the number of commercial farms increased by 43 while the total number of farms was decreasing by 32. The total number of farm operators also dropped during the period, although there was a slight increase in the owner-operator category. There was also a decline of more than 11,000 acres in the total area devoted to farms, a drop from 65.5 percent of the county land area to 63.5 percent.

These shifts in general farm characteristics, however, did not result in a loss in dollar value to the County. The actual value of farm products sold increased by about 25 percent in this five year period.

TABLE VIII

VALUE OF FARM PRODUCTS SOLD, BY SOURCE, ALACHUA COUNTY WITH PERCENT OF THE TOTAL COMPARISONS WITH FLORIDA
1959 and 1964

	Value of Products Sold		Percent of Total			
	Alachua County		Alachua County		Florida	
	1964	1959	1964	1959	1964	1959
All Crops Sold	($5,768,576)	($4,695,136)	(44.56)	(45.36)	(76.37)	(74.12)
Field Crops (other)	3,389,194	2,546,474	26.18	24.60	11.93	8.11
Vegetables	1,792,976	1,406,365	13.85	13.59	15.33	11.69
Fruits & Nuts	223,876	335,402	1.73	3.24	42.13	46.31
Forest Products & Horticulture Products	362,530	406,895	2.80	3.93	6.98	8.01
All Livestock & Livestock Products	(7,176,771)	(5,655,668)	(55.44)	(54.64)	(23.63)	(25.88)
Poultry and Poultry Products	2,554,718	997,814	19.74	9.64	5.89	4.17
Dairy Products	947,629	657,801	7.32	6.36	9.03	10.04
Livestock and Livestock Products (other than Poultry & Dairy Products)	3,674,424	4,000,053	28.38	38.64	8.71	11.67
All Farm Products Sold	$12,968,172*	$10,350,804				
Average Per Farm						
Alachua County	12,459	9,728				
Florida	23,532	15,566				

Source: /_16_/

* Note: Values under this heading i.e. crops and livestock do not add to this total. Therefore percentages were calculated on actual total of sub-headings. The overall difference which results from a minor change from preliminary to final census is not significant. Values in () are sub-totals.

Perhaps the most startling factor brought out by Table VIII is the degree in which the County differs from the State in the farm products sold. Whereas the largest percentage of farm income in the County is from livestock, approximately 55 percent, the State receives its largest percentage from crops. The biggest factor causing such variation

is the State's production of fruits, especially citrus, and nuts -- which accounts for 42 percent of the value of all products sold. If the category of fruits and nuts is removed from the census data for the state, the value of livestock as a percent of the total would increase to about 40 percent, which is still significantly less than livestocks importance to the county.

The most important shift within the farm community, as signified by the value of products sold, is the rapid growth of poultry and poultry products. From a value of less than $1 million in 1959, it had increased to more than $2.5 million by 1964. Its percentage of the value of all products sold increased from slightly less than 10 to slightly less than 20 percent in this period. In addition to the significance of this growth to the agriculture industry, it is also reflected in the employment reported for food and kindred products manufacturing. More than 250 were reported employed in 1967 in the poultry processing category. The total value of poultry products today was estimated by the County Agents Office at about $4 million.

Other rough estimates of farm produce value for 1967 were:

Beef Cattle	$3.87 million	Peanuts	$1.63 million
Timber	4.5 million	Melons	0.85 million
Tobacco	2 million	Dairy Products	1.40 million
Hogs	1.75 million		
Vegetables	1.7 million		
Corn	1.44 million		

The total estimated value of farm products for 1967 exceeded $23.6 million. This does not include a value for some products such as hay, grain and pasture. With the exception of Dairy Products, of which perhaps 40 percent is sold locally, almost all of the other products are destined for outside markets, according to the County Agents Office. The agricultural industry is therefore primarily a base sector of the economy.

Mining:

As was pointed out in the earlier review of the economic history of the County, mining at one time played a significant role. From before the turn of the century and up until World War I, Alachua County was the center for phosphate production in the State. Since that time, it has been of little consequence relative to the total employment picture. The present mining industry consists of some phosphate mining and the quarrying of limerock for road construction purposes.

The estimated annual employment in mining is shown in Table I. Percentagewise this industry group showed the greatest increase from 1950 to 1960 of all major categories. In numbers, however, the gain was only 78 employees, a fairly insignificant increase in terms of the total economic base. Based on a ratio of trend with State covered employment, the 1967 estimate stood at 181, or about 50 percent higher than 1960.

Manufacturing:

Resident employment in manufacturing increased from 1,595 (adjusted census) in 1950 to 2,542 in 1960, or 59.4 percent. During the same period the number of employees in the manufacturing industry group increased as a percent of the total number of employees from 8.00 to 9.3 or 1.3 percent. It is estimated that resident employment in 1967 was approximately 3,150 or about 23.8 percent higher than 1960. The total covered or establishment employment reported by the Florida Industrial Commission in this same period increased from 2,955 to 3,207 or 23.4 percent.

The difference between the covered or establishment employment as reported under unemployment compensation laws and resident employment was explained earlier. Actually, the two figures for manufacturing are closer than for any other industry group. The difference between 1960 covered and the adjusted census is almost the same as the difference in 1967. The 1960 covered was 2,599 and the adjusted census was 2,542 or 97.8 percent of the covered figure. In 1967 the covered stood at 3,207 and the sum of all component manufacturing industry employees at 3,148 or 98.2 percent of the covered figure. Chart IV shows the total manufacturing employees covered by unemployment compensation, the total of the component industry estimates as discussed hereafter, and the total which would have been found had not a breakdown of the various components been used, but rather a straight ratio of trend between the adjusted census and the covered.

The three classifications with the largest number of employees in 1960 were lumber and wood products, food and kindred products, and electrical machinery, equipment and supplies. The latter was a newcomer to the list of the top three manufacturing categories. In 1950 the third largest was chemicals and allied industries. Together the three major groups made up 72 percent of the manufacturing employment in 1960. In 1967 it is estimated that they account for 81 percent of the total, but it should be noted that in the covered industry, which forms the basis for the 1967 estimates, some 600 employees were reclassified after 1965.

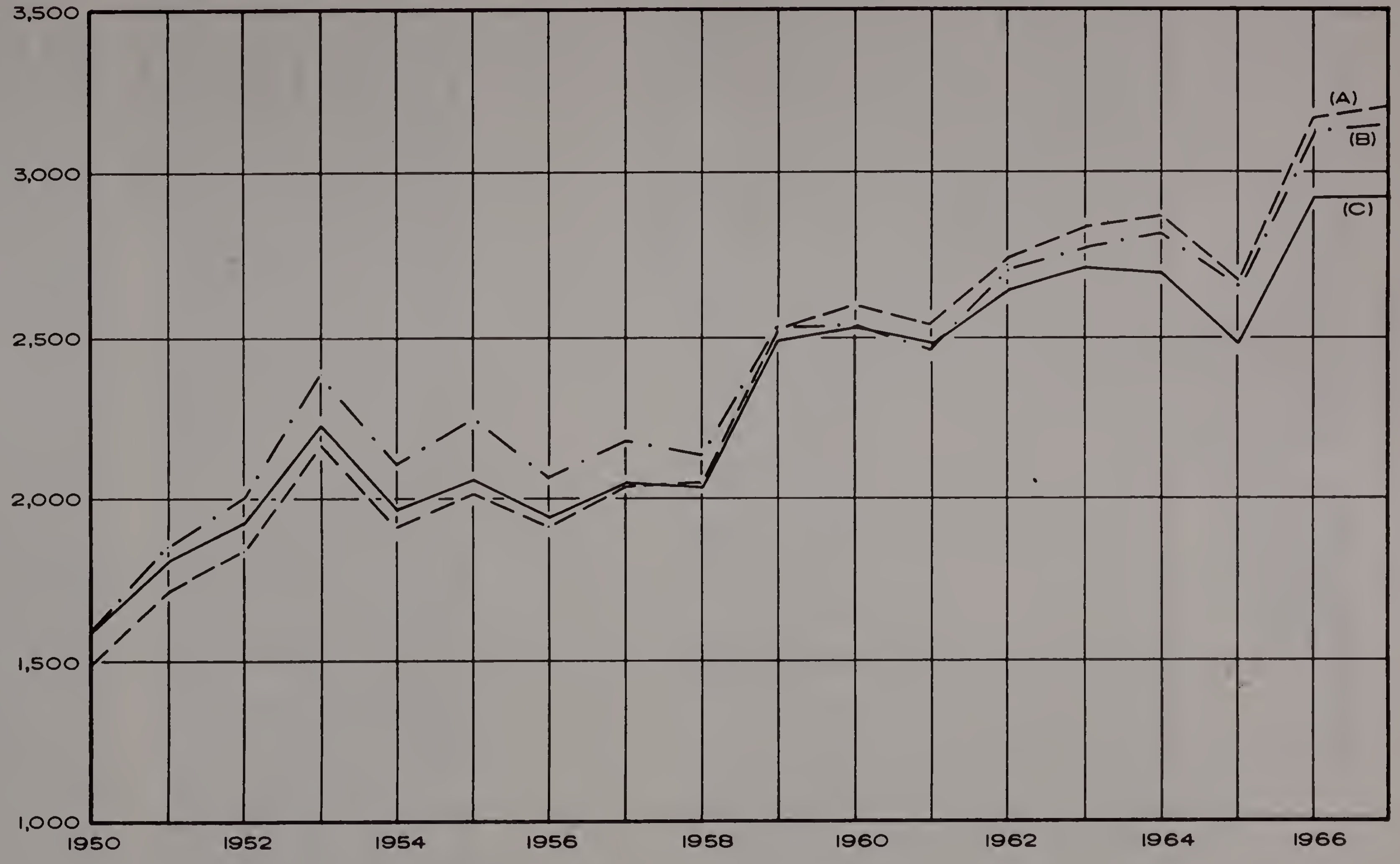
By far the largest manufacturing industry in 1950 was lumber and wood products. It accounted for an estimated total of 876 resident workers or 55 percent of all manufacturing employees and almost four and one-half percent of all employees. By 1960 the number had dropped to 574 or 22.6 percent of the manufacturing employees. Today (1967) it is estimated to contain less than 18.6 percent of the employees, but the actual number is estimated to be about the same.

The history of the lumber and wood products industry since 1950 was one of very drastic decline in the period from 1953 to 1958, after which it appeared to level off. Cabot Carbon Company which has since ceased operation, perhaps best characterizes the decline. At the time Cook was writing his thesis /13/ officials predicted the eventual closing down as their raw materials, pine stumps, dwindled. Their demise apparently was sooner than expected for only a few years later they ceased production.

CHART IV

ESTIMATED TOTAL ANNUAL RESIDENT EMPLOYMENT IN MANUFACTURING

ALACHUA COUNTY
1950 – 1967



SOURCE: [7] AND PLANNING DIVISION ESTIMATES

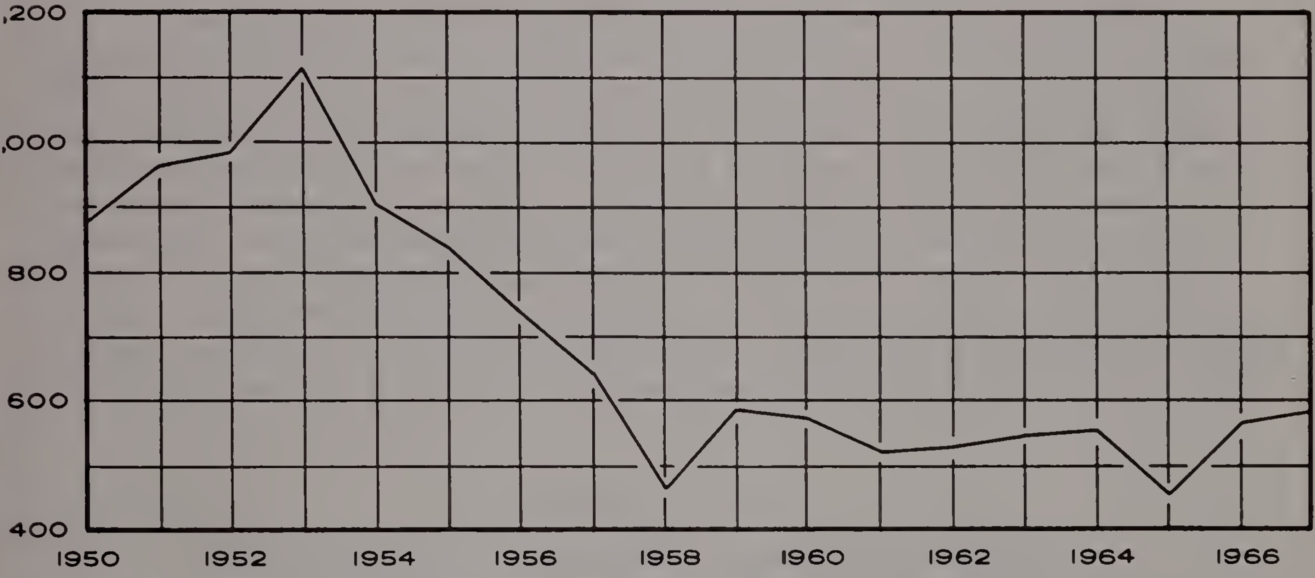
(A) COVERED
(B) SUM OF COMPONENT INDUSTRIES
(C) DIRECT RATIO OF TREND, TOTAL MANUFACTURING

CHART V

ESTIMATED ANNUAL EMPLOYMENT IN FURNITURE, LUMBER, AND WOOD PRODUCTS

ALACHUA COUNTY

1950-1967



SOURCE: PLANNING DIVISION ESTIMATES

The remaining industries in this classification appear to be better established. Wood Products Company has steadily increased in employment, going from 40 in 1963 to a current estimate of 90-100. The SIC industrial classification No. 244 which represent wooden containers had approximately 245 employees in 1963 and is estimated to be about 100 higher in 1967. Two of the largest industries in this category are Franklin Lumber and Basket of Micanopy and the American Box Company, which was formerly Adkins Manufacturing. Interviews with officials of the latter company revealed that they expect no significant increase in employment in the near future. They pointed out that substantial increase in production over the past few years have been accomplished, but that employment had remained relatively constant because of increased mechanization.

Because of the steadying influence of these three concerns it is estimated that the overall decline in the lumber and wood products field will or has leveled off. This is contrary to the apparent evidence, for if a straight ratio of trend was established with other projections for the industry generally, employment would again drop by more than half by 1975. The statistical projection based on the annual employment for the

total period covered indicated a level of only 32 employees by 1975 and none by 1980. Chart V. indicates the estimated annual employment based on a ratio of trend with the "covered" employment which is also shown. It should be noted that the sharp increase in 1965-1966 period was due to a reclassification and not to any development in the industry.

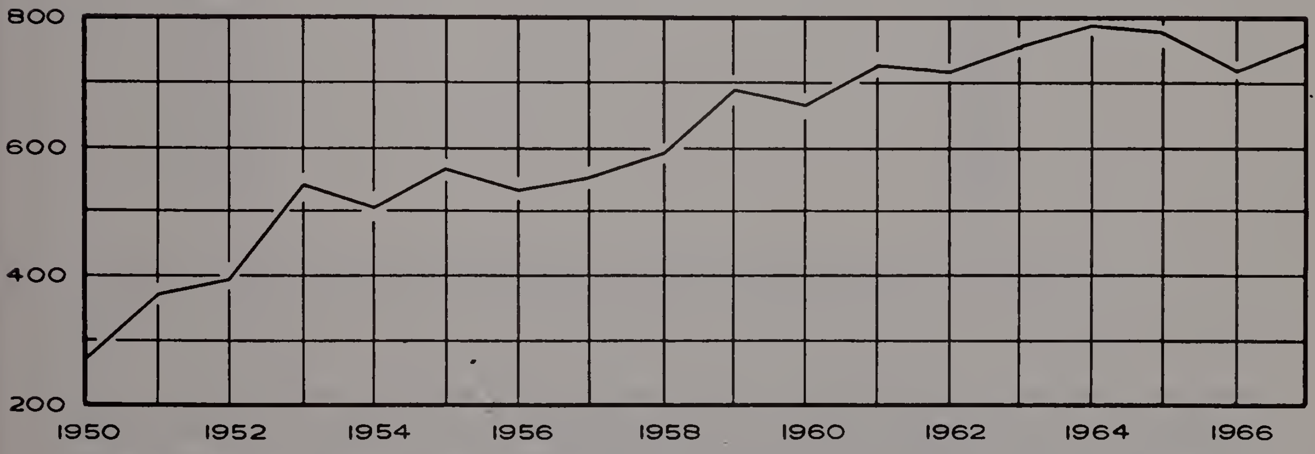
Food and Kindred Products was the second largest manufacturing employer in the county in 1960 but has since fallen behind the electronic industry and is now ranked third. Based on the covered or the estimated resident employment, food and kindred products appears to have peaked in 1964 after an impressive climb from 1950. Based on adjusted estimate of the number which would have been covered under present laws, the number of established employees in 1950 was only 153, compared to a peak in 1964 of 961. This represents an increase of 808 employees or 528 percent over this period. In terms of adjusted census figures, the increase from 1950 to 1960 was 147 percent. Since 1964 the industry has actually experienced a decline of some 40 employees, according to covered employment figures. Chart VI shows the estimated annual employment and gives a good idea of the remarkable growth that has been experienced.

CHART VI

ESTIMATED ANNUAL EMPLOYMENT IN FOOD AND KINDRED PRODUCTS

ALACHUA COUNTY

1950-1967



SOURCE: PLANNING DIVISION ESTIMATES

In his thesis, Cook speculated that the industry had peaked or at least would not greatly expand its position. This appears to have been the case in that the covered employment has shown the mentioned decline. A factor cited was the lack of local slaughter stock and the higher cost of importing same. This was the case despite the fact that the county does raise a good deal of livestock which is mostly shipped out of the area. (See discussion on projected Agriculture employment). The largest food processing firms in

the county are Copeland Sausage Company of Alachua, Roberts Packing Company, and Florida Fryers, Inc.

The latest and most significant manufacturing industry to locate in this county has been in the electrical machinery, equipment and supply category - standard industrial classification (SIC) 36. Table IX indicates the covered employment for the period of 1954-1967. The estimated resident employment is graphically presented in Chart VII, while the covered employment is shown on Table VII.

TABLE IX

COVERED EMPLOYMENT IN ELECTRICAL MACHINERY AND EQUIPMENT (SIC36)
Alachua County, 1954-1967

Year	March Employment
1954	0
1955	19
1956	149
1957	272
1958	422
1959	576
1960	591
1961	598
1962	685
1963	747
1964	687
1965	552
1966	983
1967	1,018

Source: Florida Industrial Commission, Research and Statistics Division

The Florida Industrial Commission, which compiles the covered data, reported that a change in classification added approximately 350 employees to this category after 1956. Therefore, it would appear that a peak employment in this group was reached in 1963 when over 700 were employed, after which it has slumped and picked up again.

It would be safe to conclude that the fortunes of Sperry Electronics Tube Division, which is largely dependent on Federal defense contract spending, significantly influenced the pattern of growth in this category prior to 1966. Prior to about 1964 Sperry made up almost all covered employment in this category, according to a private count furnished by the company. After an initial miss-classification General Electric

was added to the list. After a peak by Sperry in 1963 that company has actually declined somewhat in employment, but the rather steady upward climb of General Electric has offset the fluctuations at Sperry and given the total industry an overall upward projection.

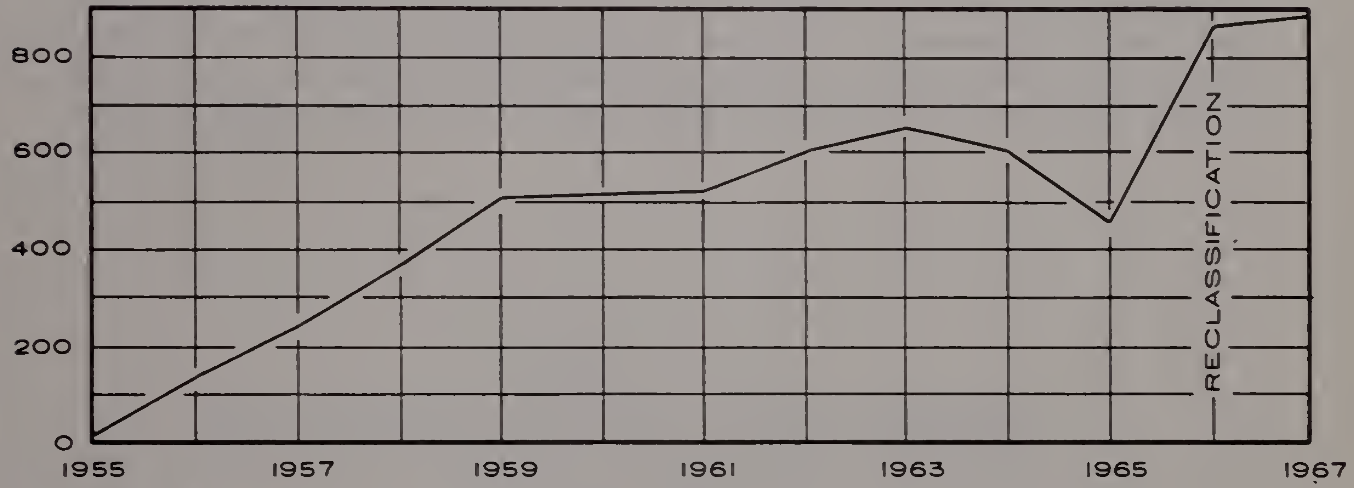


CHART VII

ESTIMATED ANNUAL EMPLOYMENT
IN ELECTRICAL MACHINERY,
EQUIPMENT, AND SUPPLIES
ALACHUA COUNTY
1955 - 1967

SOURCE: PLANNING DIVISION ESTIMATES

The remaining manufacturing employment is presented on Chart VIII under the general heading of "other" manufacturing. This catch-all category has contained a variety of industries over the years since 1950. The largest in 1960 was the chemicals and allied products industry with an adjusted employee total of 225, up more than 100 percent over 1950; another large category was printing, publishing and allied industries which also rose over 100 percent in the fifties to a total of 206. The only other category with more than 100 employees was other durables at 132, up an estimated 154 percent over 1950.

Perhaps the single largest industry of significance in the "other" grouping today is Ring Manufacturing Company (Florida Athletic Company, Inc., located opposite the 6th Street railroad depot), which Cook characterizes as an "apparel concern of the cut and fit type". His analysis revealed an expected rise in employment to about 100 persons from 41 in September, 1963. However, no significant increase over the longer period was anticipated, and to date this appears to have been the case. A check

with company officials reveals that they now employ about 120 workers, which is near the physical capacity of the plant, and no significant changes were anticipated.

Chart VIII reveals the rather irregular, but steadily increasing size of this "other" group. Such continued upward growth reflects the overall healthy state of the county economy, and also lends credence to those who argue that a solid base of service workers will provide a framework for basic employees who will be attracted to an area to fill any void created by the loss of basic industry. This surely must have happended here in certain instances. For example, the chemical industry had 225 employees in 1960 but had a covered employment of only 28 in 1967, due primarily to the closing of Cabot Carbon.

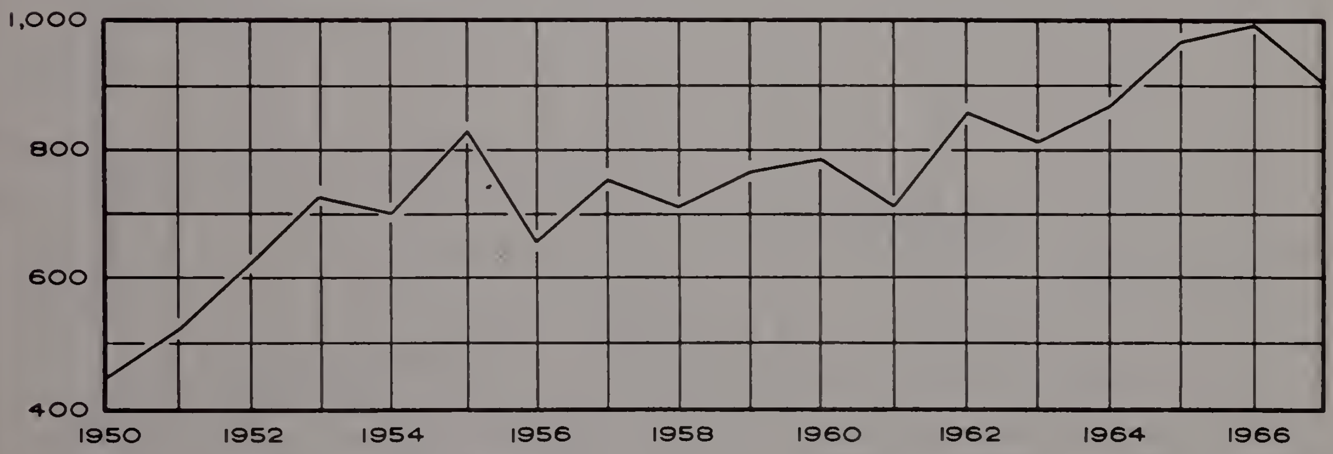
There were 448 resident employees in the other category in 1950, 787 in 1960 and an estimated 913 in 1967. The establishment covered employment for the same dates were 344,568 and 632 respectively. The fact that the resident employment is greater than the covered would indicate that much of the employment is in small firms not covered, i.e., those with less than four employees. The resident growth translates into a 104 percent increase for the total period and 76 percent for the time between the two census dates.

CHART VIII

ESTIMATED ANNUAL EMPLOYMENT IN ALL OTHER MANUFACTURING

ALACHUA COUNTY

1950-1967



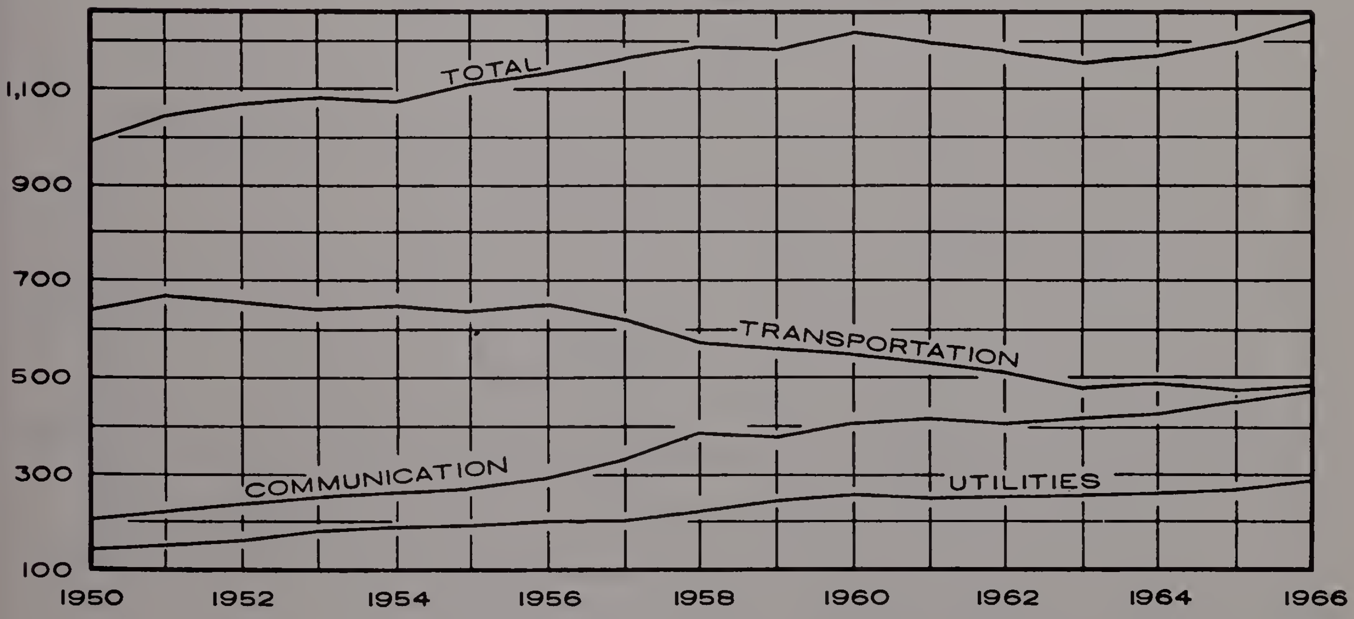
SOURCE: PLANNING DIVISION ESTIMATES

Transportation, Communication and Public Utilities

The estimated total employment in transportation, communications and public utilities was 922 in 1950, based on the adjusted census. By 1960, it stood at 1,217 an increase of only 22.7 percent as compared to an overall gain in employment of 36.7 percent. As a fraction of the total employment picture, this category dropped slightly from 4.97 to 4.46 percent.

Chart IX shows the estimated annual employment for both the total in the category and for the component parts. The annual series used to develop this estimate was based on the reported State data as no local series were available. This could conceivably have flattened the curve somewhat because of the averaging effect of using the larger data source. Since the ratio is based on the actual census data, it is felt that the overall direction is quite accurate.

CHART IX
ESTIMATED ANNUAL EMPLOYMENT
TRANSPORTATION, COMMUNICATION,
AND PUBLIC UTILITIES
ALACHUA COUNTY
1950-1966



SOURCE: PLANNING DIVISION ESTIMATES

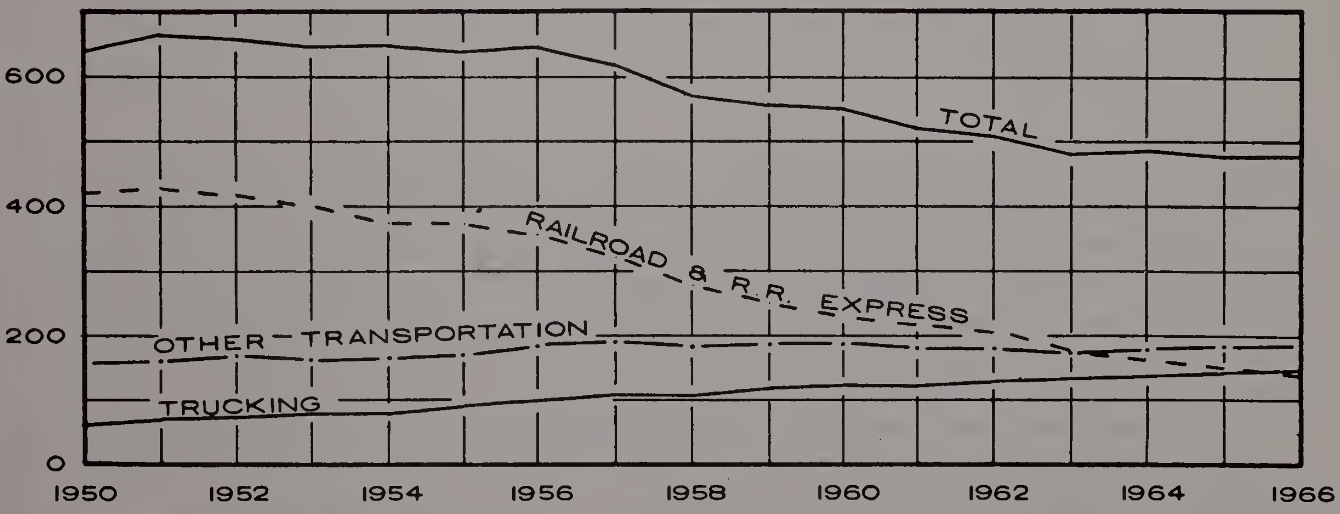
Communications and utilities should reasonably depict the growth in the general populace, as both are service industries to that population. This is particularly true of communications which is made up primarily of the telephone company, whereas some lag in utilities development is sometimes experienced in outlying areas of a growing community. In addition, actual growth in utilities is frequently hidden in many employment statistics by virtue of public ownership. This is the case in Gainesville, as communications shows a very steady upward growth, consistent with overall population increases, while utilities shows a more modest trend. The actual gain in communications employment from 1950 to 1960 was 100 percent while utilities gained 75 percent.

It is apparent from this chart that gains in communications and public utilities were offset by losses in transportation. For this reason a further breakdown of the transportation industry was prepared. This is shown in Chart X. From this, it can be seen that the losses have occurred in railroad employment, with other components actually showing modest gains. This conclusion is strengthened by a look at the actual census figures for 1950 and 1960. It shows a drop of 16 percent in the overall transportation category, with railway and railway express dropping by almost half from 406 to 222. Trucking and warehousing actually showed a gain from 69 to 121 and other transportation from 146 to 177 for the same period.

CHART X

ESTIMATED ANNUAL EMPLOYMENT IN TRANSPORTATION

ALACHUA COUNTY
1950-1966



SOURCE: PLANNING DIVISION ESTIMATES

Retail Trade:

While there has been some rather marked cyclical movements in employment within the various sub-categories making up retail trade, the overall trend in the total group has definitely been one of steady growth. Retail trade is very reflective of, as it is dependent on, the population growth and income of a community. It is not surprising that the population growth curve and retail employment trends are basically very similar. Actually, retail employment surpassed the total growth in population, but this is due in part to increases in the income of the population.

The total reported employment, adjusted for underenumeration and shifts in classification was 2,967 in 1950 and 4,376 in 1960. This represents an increase of 47.5 percent during that decade. The total covered employment showed an even greater increase from 1,347 to 2,725. The 1950 figures of 1,347 is based on a reporting unit of establishments with eight or more employees instead of the four or more of later years. Even if adjusted however, the net gain is believed to be about 60 percent for the covered employment.

Because of the number of smaller establishments, many with less than four employees, retail trade is one of the industry groups which frequently has a smaller covered employee count than the actual resident employment. That the covered employment showed a higher percentage gain than the resident employment probably indicates a trend toward larger firms, hence a higher percentage of the retail employees would be covered by the unemployment compensation laws.

In addition to their publication of actual reported or covered employment, the Florida Industrial Commission regularly publishes an estimated total labor force count for the various counties. The 1967 combined retail and wholesale trade estimate was 5,700. This is less than the projected estimate established for retail alone by a ratio of trend between the 1950 and 1960 censuses and the covered employees. The latter projects the 1967 resident retail employment at 5,936 not including wholesale.

Chart XI shows the ratio of trend estimates for the food and dairy products, eating and drinking and "other retail" categories along with a total of all three. The "other retail" estimate was obtained by first estimating total retail by ratio of trend with the total covered employment, from which estimates for food and dairy and eating and drinking places were deducted. The latter had also been obtained by ratio with the covered data for the two respective groups. These three are the only industry breakdowns provided in the census and therefore the only ones for which projected and current estimates could be made. However, an idea of the breakdown by other major groups can be seen in Chart XII which shows the covered employment by several such categories.

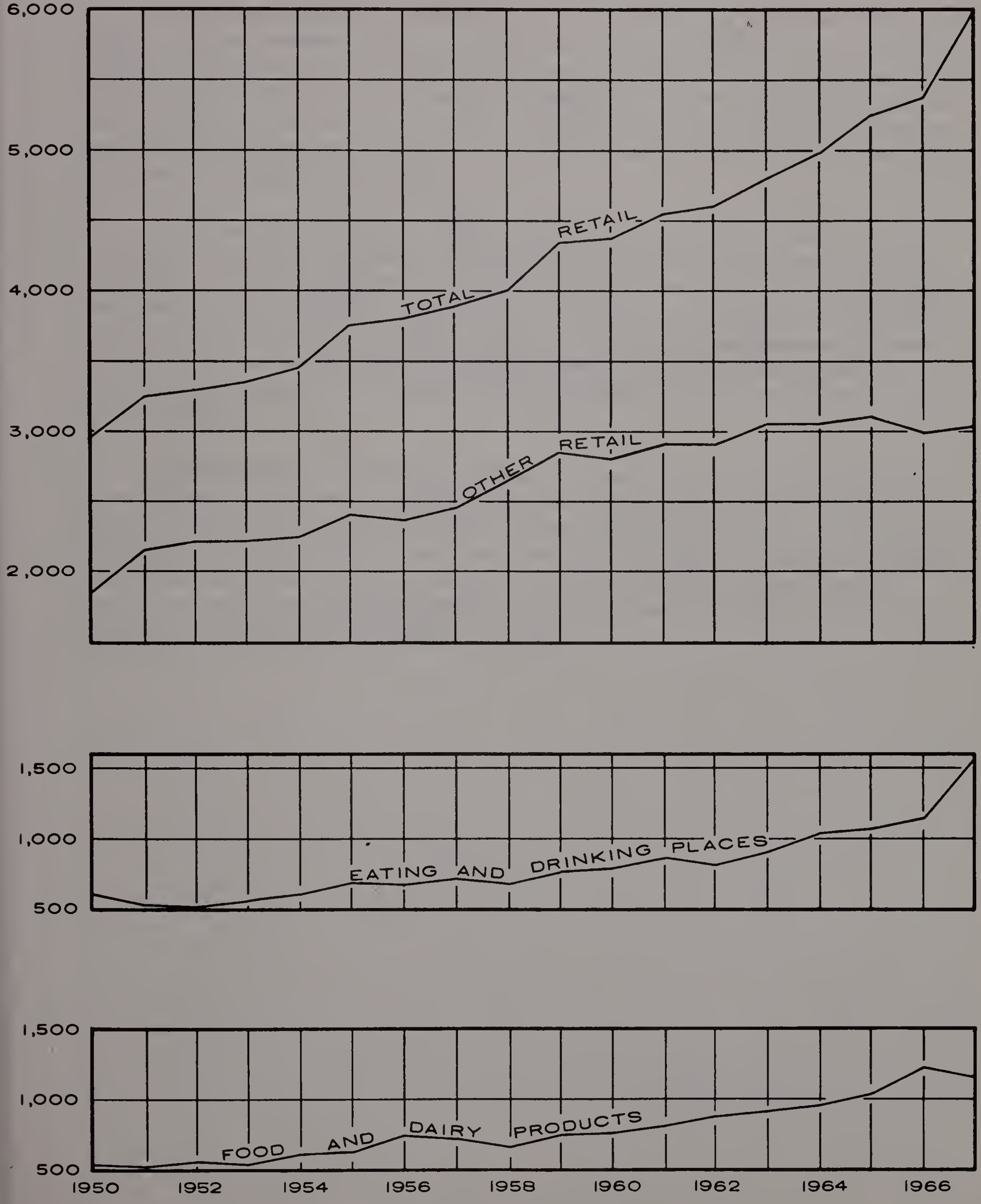
This latter chart shows to an extent the cyclical nature of individual components of retail trade, although it should be kept in mind that the totals based on the coverage might fluctuate more widely than the actual employment because of the shifts in store sizes and greater coverage. It should be kept in mind that the latest data shown is for

CHART XI

ESTIMATED ANNUAL RESIDENT EMPLOYMENT IN RETAIL TRADE

ALACHUA COUNTY

1950 - 1967



SOURCE: PLANNING DIVISION ESTIMATES

March, 1967, which is prior to the opening of the Mall and whatever changes in the employment structure that might have made.

The largest employers in retailing are of course the large department stores, led by Sears with an estimated 250 or more employees. Sears has now been joined by Maas Brothers with about the same number of employees, followed by Fields, Belk's and Wilson's with each estimated to have around 100 employees. Other large retail employers are the chain super markets such as Publix and Winn-Dixie, and a couple of the restaurants chains such as King's Food Host. It is not believed that any other retail employer has a payroll of more than 50 people.

Total sales reported in the 1958 Census of Business was $70.33 million and in 1963 $100.19 million - a healthy 42.46 percent increase in just five years. However, the number of establishments rose from 607 in 1958 to 681 or by only 12 percent during the same period. In 1954 the County had 579 establishments with sales of $53.22 million. Thus, for the period from 1954 to 1963, the number of establishments increased by 102 or 17.6 percent while sales climbed by $46.97 million and 88.26 percent. A more detailed analysis on retail sales will be presented in the forthcoming commercial land use study.

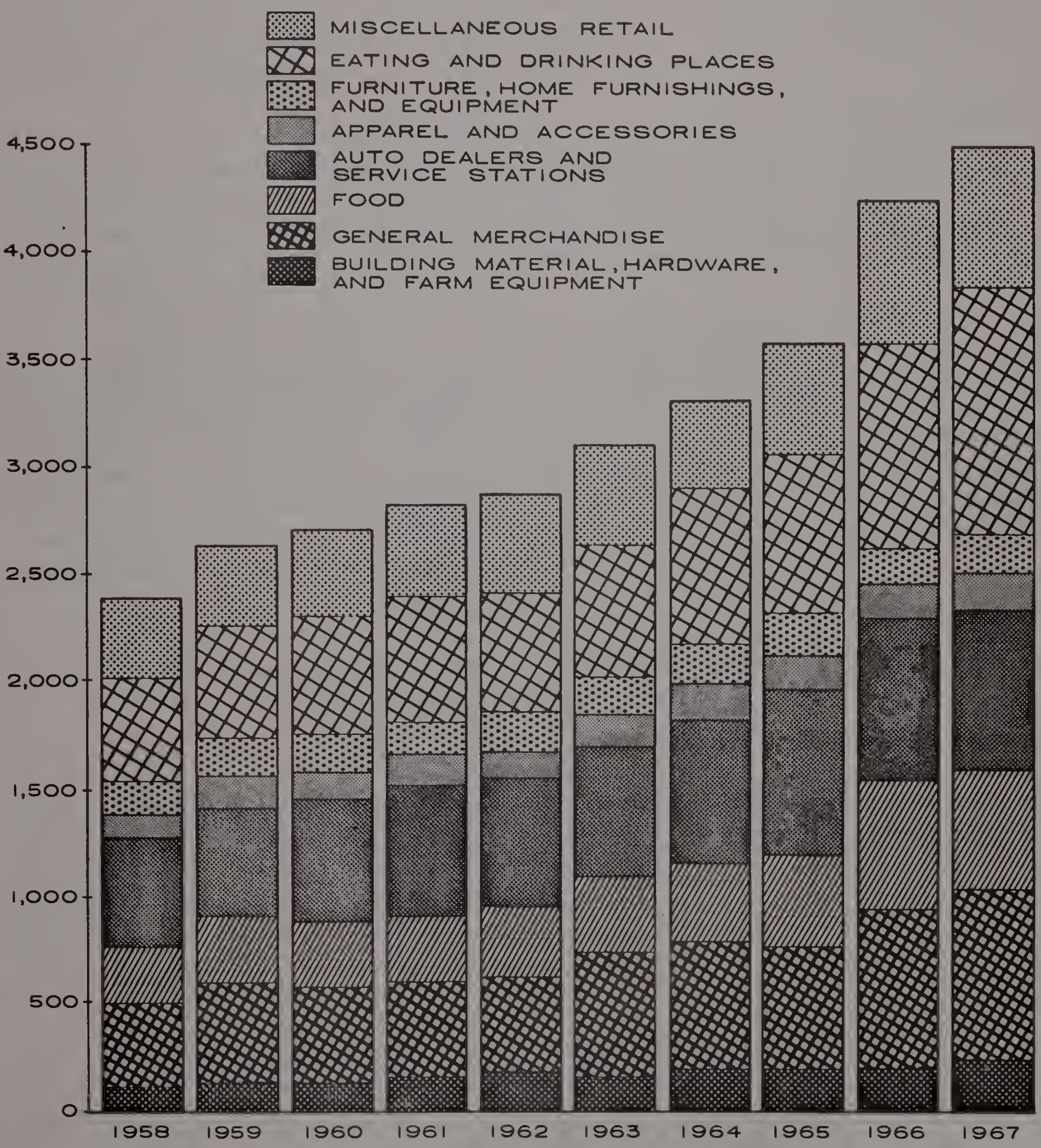
Of the three major categories the greatest growth in recent years has occurred in eating and drinking places. This category has recently experienced a substantial increase in the number of establishments, especially those of the drive-in type catering primarily to college students. In addition, the sale of alcoholic beverages by the glass was authorized in 1963 stimulating the opening of numerous bars, lounges and etc. Eleven new eating and drinking establishments were added from 1965 to 1967 alone, according to Florida Industrial Commission reports.

CHART XII

RETAIL TRADE EMPLOYMENT COVERED BY UNEMPLOYMENT COMPENSATION LAWS

ALACHUA COUNTY

1958 – 1967



SOURCE: [7]

Wholesale Trade:

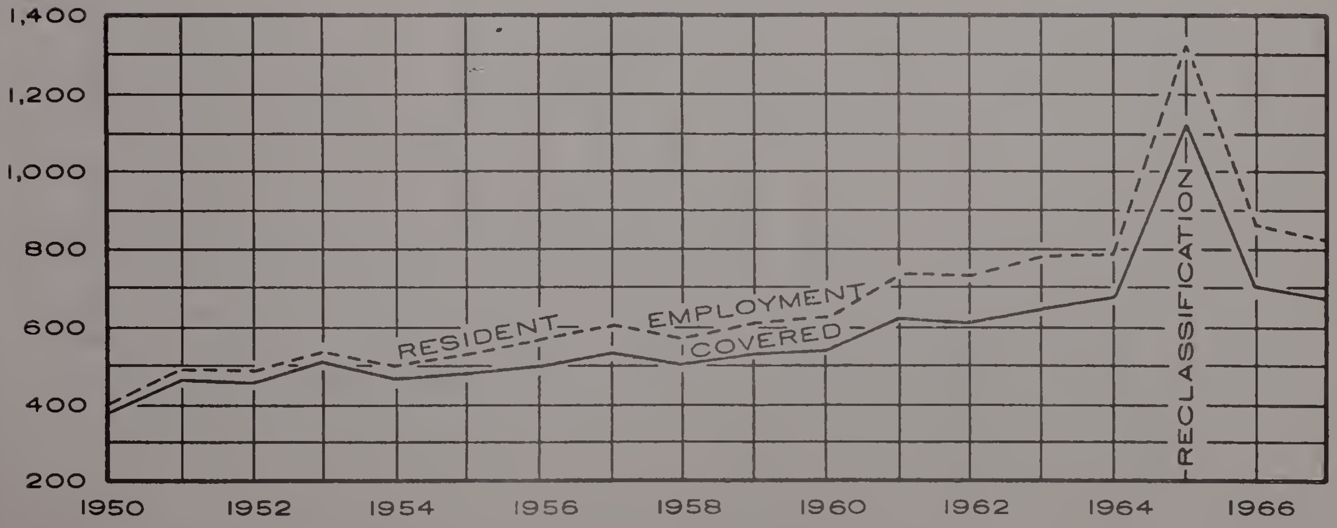
The growth in employment in wholesale trade is depicted on Chart XIII. This graph shows both the covered employment and the estimated employment as established by a ratio of trend between that data and the adjusted census data. From 1950 to 1964, the graph depicts a stable upward growth typical of a growing community. In 1965 there occurs a terrific peak which could not be accounted for by any known expansions in wholesaling activities. A check revealed that a large manufacturing industry was incorrectly classified in wholesaling, and that afterwards that industry plus some others were reclassified. A check of the graph of electronics and lumber and wood products will reveal an opposite trend, i.e. a drop in employment at this time.

The number of wholesale concerns listed in the 1958 and 1963 Census of Business showed an increase from 83 to 100, with a corresponding increase in sales from $41.79 million to 49.91 million. This was an increase of about 20 percent in both wholesale firms and in sales in the five year period. Even so, this is not particularly impressive when compared to growth in retail sales for the same period. The latter increased from $73 million to $100 million, or 37 percent.

Employment increased from 396 (adjusted census) in 1950 to 637 in 1960, or almost 61 percent. It was estimated to be 838 in 1967, an increase of slightly less than 32 percent over 1960. The increase for the whole period from 1950 to 1967 is estimated to be 112 percent. This amounts to an annual growth rate of approximately 4-1/2 percent (compounded), which is considerably higher than the rate experienced nationally. However, if the rate is calculated on the basis of covered employment from 1956 (the first date after switching to present coverage of firms with 4 or more employees) the rate is found to be considerably lower at about 2.7 percent.

CHART XIII

ESTIMATED ANNUAL EMPLOYMENT
IN WHOLESALE TRADE
ALACHUA COUNTY
1950 - 1967



SOURCE: PLANNING DIVISION ESTIMATES

Finance, Insurance and Real Estate:

Growth in this industry group far outstripped the overall growth in population for the last decade. The 1950 employment was 424 and by 1960 was 934, or more than 120 percent higher, compared to a population increase of approximately 32 percent. Based on a ratio of trend (with self-employed and unpaid family workers figured separately) with employees covered by unemployment compensation, it appears that this growth has continued and was slightly less than 1,500 by 1967. The category also increased its percentage of all employees from 2.12 percent in 1950 to 3.42 percent in 1960.

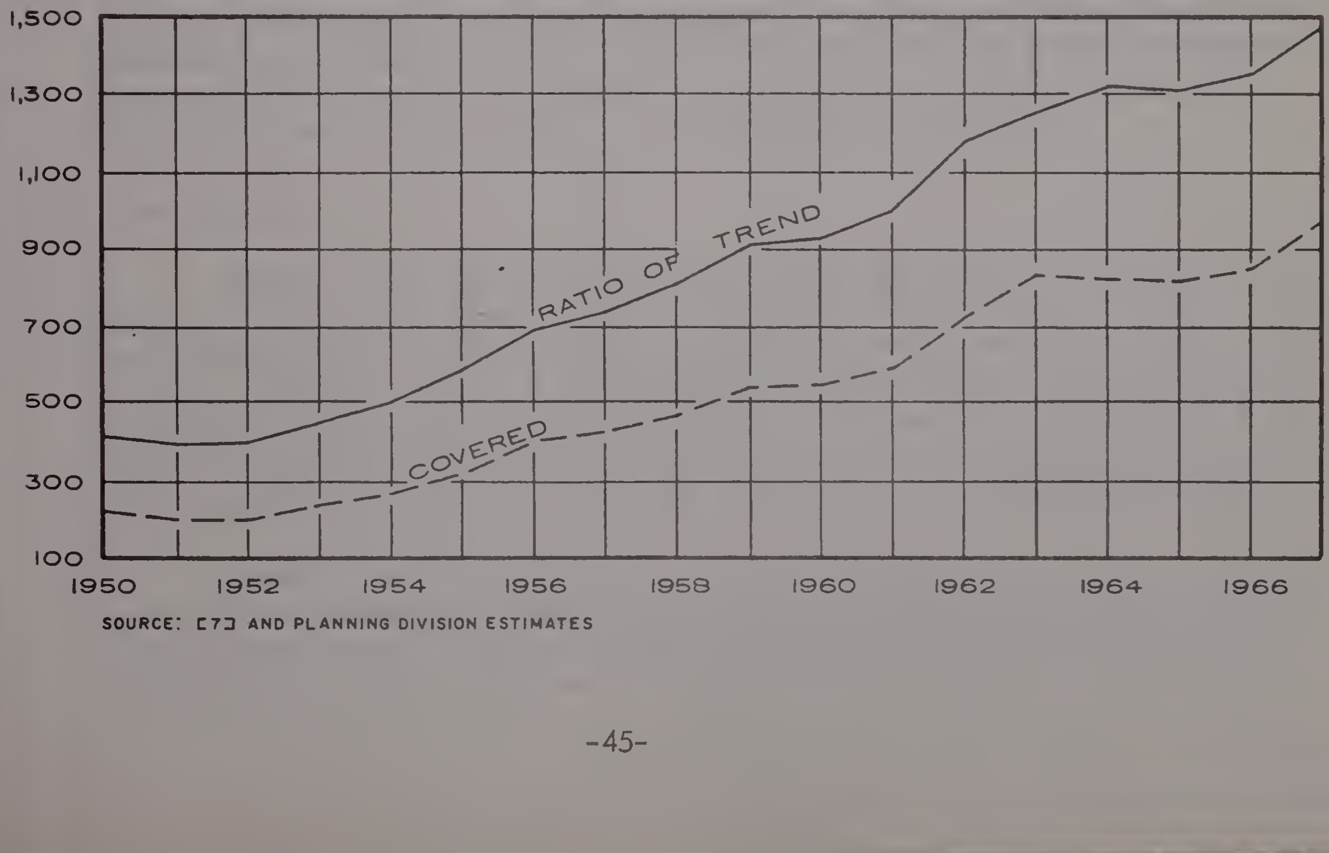
The estimated annual employment is portrayed on Chart XIV which also shows the covered employment. It can be noted that there is a rather large spread between the "covered" employment and the census reported employment. It is felt that this is due primarily to the large number of small firms not covered by unemployment compensation. For example, the March 1967 coverage of real estate included only ten (10) firms whereas the latest City Directory listed 47 firms.

CHART XIV

ESTIMATED ANNUAL EMPLOYMENT IN FINANCE, INSURANCE, AND REAL ESTATE

ALACHUA COUNTY

1950-1967



SOURCE: [7] AND PLANNING DIVISION ESTIMATES

Services:

The most difficult general category of employment to analyze is services. Included under this broad heading are such diverse industry groups as professional services -- doctors, lawyers and the like -- to private domestic workers. The 1960 census listed the following industry groups in the County: business services, repair services, private household workers, other personal services, entertainment and recreation services, hospitals, private and government education, welfare, religious and non-profit membership organizations, and other professional and related services.

Unfortunately, not all of these same industry groups were listed in the 1950 Census, making detailed comparison impossible. For example, the 1950 Census included hospital employment and other medical professions under either "medical and health services" or "other professional and related". In the 1960 Census the same employees would have been listed under one of these categories: "hospitals", "other professional and related", or "welfare, religious and non-profit organizations." It is, therefore, impossible to sort out hospital employment, which is important to a full understanding of the economic picture of the area.

To make analysis even more difficult, reliable annual series data for ratio of trend estimates could not be found. The only coherent covered industry under the services classification which ran from 1950 to 1967 was personal services. It was concluded that it was very likely that even this category contained some different industries in the early fifties than it did later on. Since this would distort a ratio estimate, it was decided not to use the data separately, but to run only one ratio for all services included in the covered employment data. This includes all industry groups except education and private household workers. In the following pages, however, some of the major industry groups are examined separately even though estimates of annual employment were not made for each of them. Table X lists the covered service employment for the past 5 years along with the percentage increase of various components. From this, some idea of the growth in such categories can be obtained.

Personal Services

"Other personal services" is the industry group heading of the census for several diverse enterprises such as shoe repair, dressmaking, laundry and dry cleaning and hotel and lodging places. (That the latter was included in unfortunate in that it was a separate category in 1950, and growth in employment in this group is believed to have had a more significant increase than the group as a whole since the opening of Interstate 75.) This growth is indicated in Chart XV which shows the covered and County Business Patterns /39 / reported employment for both hotels/motels, etc. and for personal services.

Growth in personal services from 1950 to 1960 was a modest 9.66 percent compared with an increase of 32 percent in population. In the past five years, however, covered employment in hotels and lodging has grown at an average compound rate of 6.34 percent per year, while other personal services grew by 2.9 percent per year .

TABLE X

COVERED EMPLOYMENT IN SERVICES, ALACHUA COUNTY
1962-1967

Industries	Number 1962	1963	1964	1965	1966	1967*	Percent of Total 1962	1967*	% of Increase 1962-1967
Hotels & Lodging Places	236	221	218	256	277	321	18.32	16.32	36.0
Personal Services	411	426	436	478	546	474	31.91	24.10	15.3
Miscellaneous Business Services	103	141	259	225	250	490	8.00	24.91	375.1
Automobile Repairs	35	61	31	44	43	42	2.72	2.14	20.0
Miscellaneous Repair Service	26	25	26	N/A	N/A	19	2.02	0.97	26.9
Motion Pictures	73	72	58	67	79	92	5.67	4.68	26.0
Amusement and Recreation Services	68	52	74	89	67	83	5.28	4.22	22.1
Medical and Other Health Services	121	137	128	111	125	148	9.39	7.52	22.3
Legal Services	33	55	55	62	68	66	2.56	3.35	100.0
Nonprofit & Membership Organizations	42	37	39	41	41	52	3.26	2.64	23.8
Miscellaneous & Other Services	140	156	132	177	189	180	10.87	9.15	28.6
Total	1,288	1,383	1,456	1,550	1,685	1,967	100.00	100.00	

* Preliminary

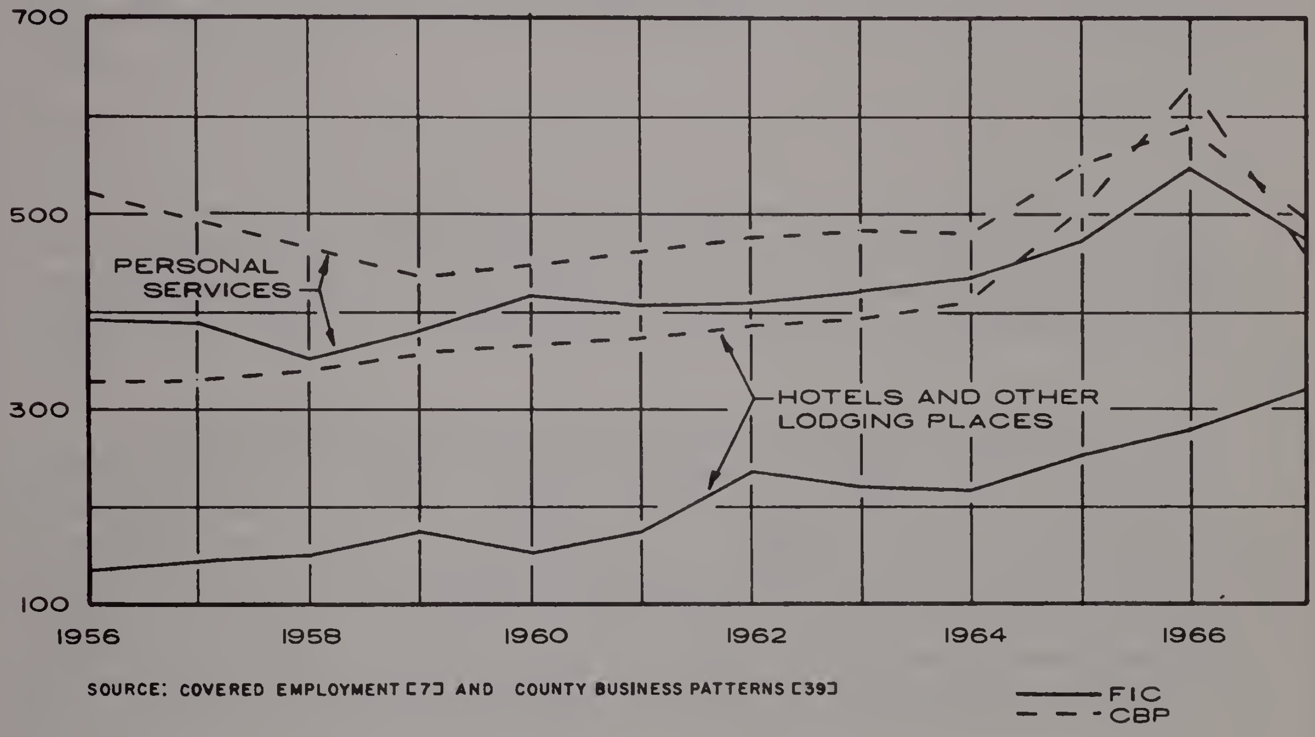
Source: Florida Industrial Commission /7_/

CHART XV

COMPARISON OF EMPLOYMENT IN PERSONAL SERVICES AND HOTELS AND OTHER LODGING PLACES AS REPORTED IN COUNTY BUSINESS PATTERNS AND FLORIDA INDUSTRIAL COMMISSION

ALACHUA COUNTY

1956-1967



SOURCE: COVERED EMPLOYMENT [7] AND COUNTY BUSINESS PATTERNS [39]

(See Table X). The combined rate was about 4.2 percent, which if reflective of what has occurred in the total industry, would mean that resident employment would stand at about 1,500 by 1967.

Business and Repair Services

Business and repair services were grouped together for purposes of this analysis. Together they constituted less than two (2) percent of all employees in 1950 and less than one and one-half (1.5%) in 1960. The actual reported census showed a slight decline, which when adjusted resulted in negligible increase from 369 to 398.

A number of factors are considered to have contributed to the slow growth or decline in employment in this category. For one thing, the cost for most household machines declined drastically relative to the earning power of the average individual in this period. In many cases it is almost as cheap to buy a new appliance as to have it repaired. In addition many employees in these occupations may now be hidden in the employment reports of parent manufacturers or suppliers who now repair their own machinery. This is especially true of major office equipment companies, most of whom have their own repair crews.

In the past five years covered employment in "miscellaneous business services" grew considerably. This includes services in addition to repairs. The primary upswing occurred after 1966 and can be accounted for principally by the appearance of a single company - Servomation - which was awarded a contract for food service at the University of Florida in July, 1966. There was little actual increase in total employment in the community as most of the employees switched from the University to this company - but it did serve to increase the count in this category. About 250 - 300 employees were added to the category.

Entertainment and Recreation Services

Employment in entertainment and recreation services in 1960 stood at 175 before adjustments and 184 afterwards. What is startling about these figures is that comparable figures for 1950 are 195 and 182. In this day of the shorter work week and increased leisure time it was surprising to find that employment in this category has remained almost constant.

Several reasons could help account for this. Perhaps the most significant one would be the fact that University sponsored programs and events, which would not be reflected in these totals, make up a very large percentage of the outlets available for entertainment and recreation in the community. In addition, until very recently movie theatres had shown a decided decline in popularity, with automation adding to the lessening employment in this industry. The recent popularity of movies is not reflected in these census figures. Finally, a large part of the recreation and/or entertainment activities of this area are not in sponsored but personal activities such as swimming, fishing, hunting and visiting the beaches.

Covered employment in both motion pictures and other amusement and recreation registered gains at four plus percent per year over the past five years. If a combined annual growth rate of 4.4% were applied to the 1960 Census it would result in an estimated 250 persons employed in 1967.

Professional Services, Including Hospitals and Related Services

As the introduction to this section noted, it was necessary to combine certain industry groups such as this one because different categories were used in the two census reports. Growth in this combined group from 1950 to 1960 was spectacular, due primarily to the establishment of the medical school and center at the University. The total adjusted employment for the 1950 Census was 777; the adjusted count for 1960 was 2,436 or more than 200 percent higher.

Based on rather incomplete and indirect indicators, the pace from 1960 to date appears to have continued at a high level. For example, growth at the Medical Center by any of several measures shows a definite upward trend. The number of students in the Medical School increased from 452 in the 1960/61 fiscal year to 1,083 in 1968, a gain of about 140 percent. Likewise the faculty has grown by 125 percent and the non-academic staff by 73 percent in this same period.

The Medical Center is probably a good indicator of overall growth in this industry group for many of its employees were believed to be categorized in the Census under this group rather than under education. However, since all the hospitals in the community are publically owned, they are not covered or reported under the unemployment compensation laws. Under the medical and other health services classification of the covered employment there has been a 22 percent increase in employment in the past five years. (See Table X). Another professional group, legal services, doubled in this period.

The medical/health services growth rate of covered employment for the five year period from 1962-1967 was 4.1 percent, while legal services was growing at the extremely high rate of 12.9 percent compounded per year. If it were assumed that the medical/health growth rate of covered employment was indicative of what has happened in this category as a whole, and such is very possible since medically oriented employment is believed to make a majority therein, the 1967 resident employment would be just under 3,000. If one considers the rate of growth of the Medical Center mentioned previously, this may in fact be conservative.

Estimated Annual Employment in All Services Excluding Education and Private Household Workers

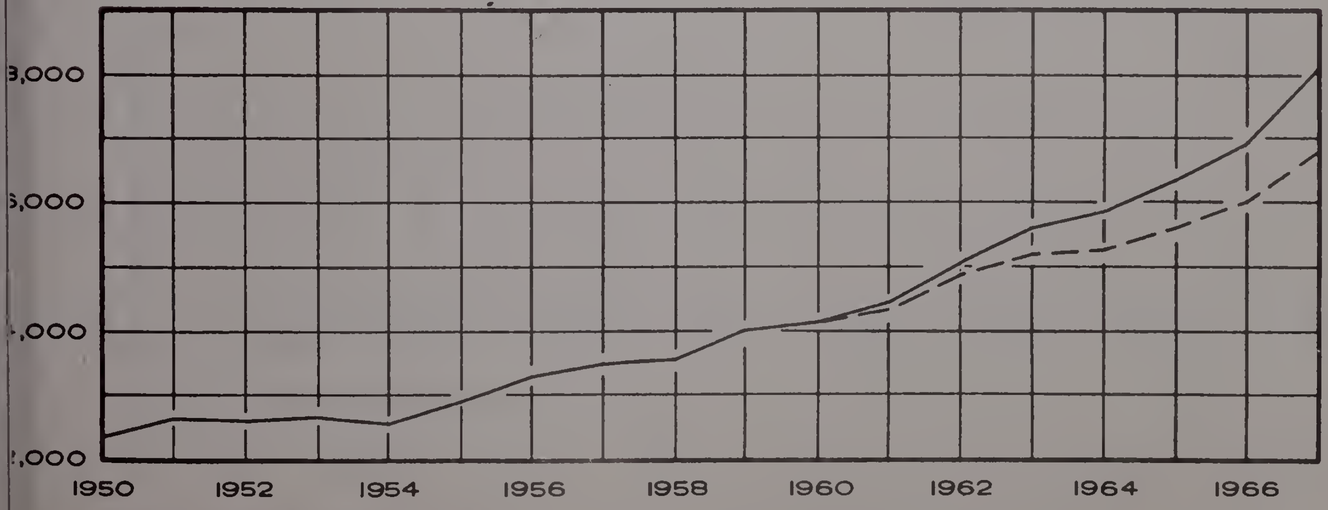
While reliable annual series could not be found for the individual industry group discussed previously, a ratio of trend estimate could be made for all combined services covered by unemployment compensation reports. This included all services except private household workers and education. The combined employment in 1950 was 2,342, after adjustments. By 1960 it had increased to 4,130, a gain of 76.3 percent.

CHART XVI

ESTIMATED ANNUAL EMPLOYMENT IN ALL SERVICES EXCLUDING EDUCATION AND PRIVATE HOUSEHOLD WORKERS

ALACHUA COUNTY

1950-1967



SOURCE: PLANNING DIVISION ESTIMATES

A estimate by ratio of trend (in which the gap between the covered employment and the adjusted census is increasing) resulted in a total employment figure of 8,091 in 1967. This is an increase of 95.7 percent over 1960, and a total increase from 1950 of 245 percent. On the other hand if it were assumed that the differences between the covered and census counts were not increasing, but remained at the ratio found for 1960, the estimated employment in 1967 would be about 6,775. (A similar ratio with the total estimated employment reported by FIC was 6,768.) This would be an increase of 64 percent since 1960 and 189 percent since 1950. In both cases self employed and unpaid family workers were estimated separately (See Appendix C) and deducted from the adjusted census before estimates were made, then re-added to derive the final estimates.

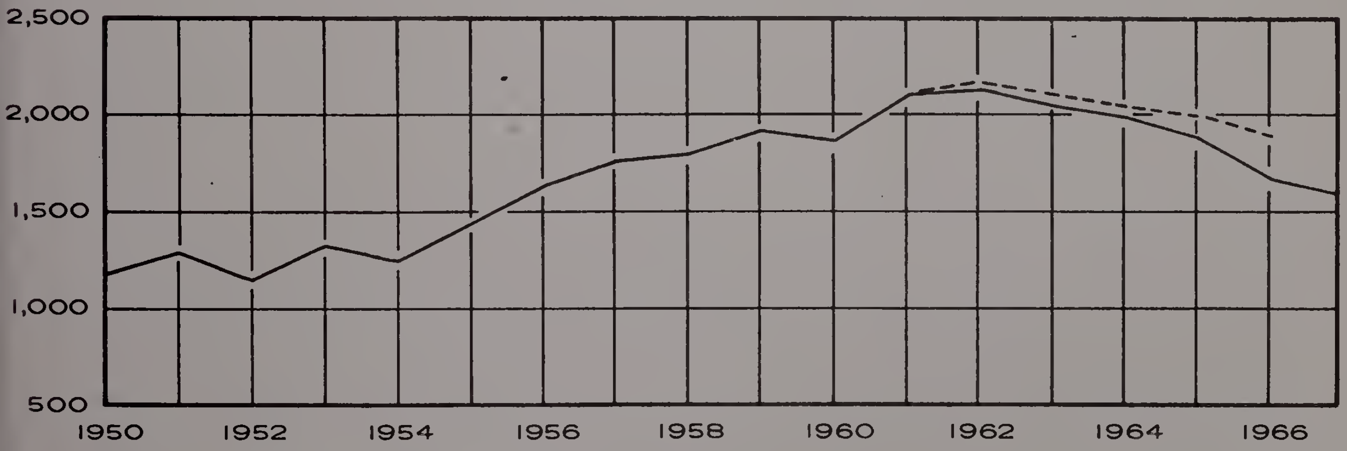
The two estimates of annual employment are shown on Chart XVI. They formed the basis for high and low projections of future employment in the service industry.

Private Household Workers

Another factor which made estimating difficult in the service industry was the absence of any data series for the private household workers for the local or even the State level. Only national data and the 1950 and 1960 Census data was available. The latter was adjusted for underenumeration and changes in classification with the final results being 1,171 employees in 1950 and 1,841 in 1960. This is an increase of 57.2 percent or about 4.6 percent annually for this period. Were the same annual increase to continue, the 1967 employment would have been 2,550 in 1967.

CHART XVII

ESTIMATED ANNUAL EMPLOYMENT
PRIVATE HOUSEHOLD WORKERS
ALACHUA COUNTY
1950 - 1967



SOURCE: PLANNING DIVISION ESTIMATES

It is believed that such is not the case however. Because of the nature of the group there is practically never any reported employment in the unemployment compensation reports, which formed the basis for most employment estimates. In discussions with various local officials, personnel directors etc...there was almost unanimous agreement that the number had declined in recent years. The reasons given usually include the fact that non-white population, who make up the vast majority of such employment, have in recent years turned away from this area of employment in search of better pay and/or more prestigious positions. Other reasons cited were the fear among whites created by the recent riots in many cities, automation in household appliances and the higher pay requested by the employees.

The estimated employment based on a ratio of trend with nationally reported data is shown in Chart XVII. Because of certain inconsistancies the resultant estimate was supplemented by a second estimate which is based on a straight ratio between only the 1960 Census and 1960 nationally reported March employment data. This ratio was then used to project local employment to 1967. The estimated annual employment for that date was approximately 1,600 vs. slightly less than 1,900 by 1966 from the first estimate. Based on the factors cited above, the fact that the employment nationally was declining and the best subjective judgement available on the question, it was concluded that the lower estimate was the most accurate. Both are shown on Chart XVI but the lower of the two was used in other tabulations.

Education Services - See Government

While education employees are classified as service workers in the Census, it was believed that a better understanding would be had if the majority of the employees in government were discussed in a separate section. Thus while the projections and totals are included in the tables under services, education is analyzed in a following section.

Government:

The census classification of employment by industry group does not include a single category for government workers. In fact it does not provide any means whereby all government workers can be separately identified with their employers. There is another census table for "class of workers" which indicates the total number of government workers, but there is no cross tabulation for counties which are not standard metropolitan statistical areas.

Private or non-governmental employers are included in the totals for the industry group by which they are employed regardless of occupation or service rendered. Such is not the case with government employees. Government education employees are identified, as are administrative workers in government. All others are included in the industry group of their private enterprise counterpart.

There were 8,810 government workers listed in the class of worker table. There were 5,530 listed under the government education industry group, 1,015 in public administration and since all hospitals in the County are publically owned, 858 hospital workers may be added for 7,403 readily identifable government workers in the industry group tables. It must be assumed the remaining 1,407 are distributed throughout the remaining classifications.

Certain real difficulties were experienced in applying the methodology of this study to the industry group consisting primarily of government workers. For example, since public administration is only a portion of the total City, County and State employment, the correlation between the census reported data and data from other sources bore even less resemblence than was the normal case in comparing resident vs. establishment employment. Analysis of the industry group "education" was complicated by the presence of both the local school employees and a state university's employees.

By far the biggest problem, however, is that no consistently reliable annual data series could be found with which to establish ratio of trend estimates. Of the various government employees only Federal workers are covered by unemployment compensation laws. Therefore the data series used primarily in this study for establishing ratio of trends did not exist for this industry group. Data that was available was generally too exclusive or too inclusive, or based on estimates and not on "hard" or actual counts.

The importance of government workers to the economy of the County is well known. In 1950 the census indicated that 4,461 out of 19,480 or 22.9 percent of all workers were government employees. By 1960 the number had increased to 33.23 percent. Comparable percentages for the State were 10.7 and 12.22 for 1950 and 1960 respectively. The difference between State and County percentages is of course the presence of the University.

In any event, growth of government employees increased both in numbers -- by 4,349 or 97.5 percent -- and as a percentage of the total work force during the fifties, and from all indications this trend had continued in the period since the last census.

The Florida Industrial Commission estimates of establishment (total) employment has grown from 10,900 (vs. 8,810 resident census count) to a provisional estimate of 15,500 in 1967, an increase of 42 percent. The Veterans Hospital was opened in this period as a totally new industry to the economic base, but was not included in the latter estimate.

Public Administration

The reported employment in public administration in 1950 was 630, which when adjusted stood at 623. The reported number of employees in 1960 was 1,015, which was adjusted to 1,068. The increase based on the adjusted figures, was 71.4 percent for this period. This is an annual rate of about 5.52 percent.

No annual data series could be found which included the same employee categories as the census, that is local, state and federal local public administration plus postal service employees. The following table includes the estimated number of employees as reported by the Florida Industrial Commission. Only the federal is an actual reported count. The remaining categories are not covered by unemployment compensation and are therefore estimates. More significantly, the County reported employment includes both the county hospital and school board employment, while the state figures includes the Sunland Training Center School.

TABLE XI

GOVERNMENT EMPLOYMENT IN ALACHUA COUNTY, FLORIDA
(Not including the University of Florida)
1960-1967

Year	Cities	County	State	Federal	Total
1960	462	1,718	1,379	375	3,934
1961	477	1,804	1,433	377	4,091
1962	479	1,810	1,495	439	4,223
1963	494	1,905	1,507	432	4,338
1964	494	1,950	1,507	538	4,489
1965	520	2,100	1,542	546	4,708
1966	783	2,660	1,629	689	5,761
1967	835	2,750	1,659	647	5,891

Source: Research and Statistical Department, Florida Industrial Commission

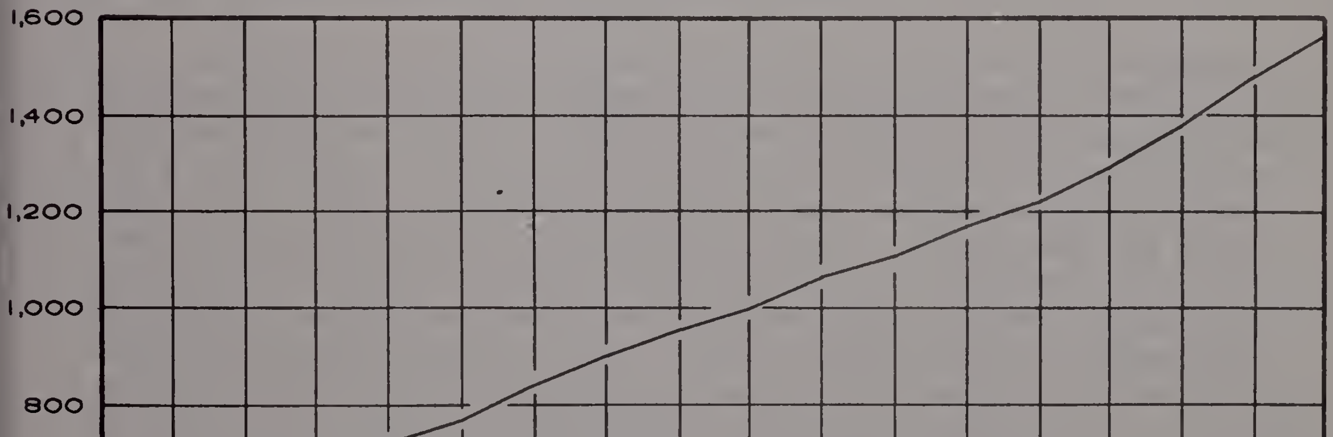
Of the above figures a significant number would be classified in categories other than public administration under census definitions. For example, the 1967 County employment includes a estimated 2,050 school board employees, and the remaining 700 would have to be divided between actual public administration and the County hospital. Another source estimated the actual county public administration employment at approximately 283 in 1967. The state data includes an estimated 1,175 Sunland employees for

the same year. Therefore, the reported employment would stand somewhere around 2,239 for 1967, if the known non-administrative employees are subtracted out. This is better than twice the reported 1960 census figure. Using the same process an estimate of 1,354 was derived for 1960, which is 26.78 percent higher than the census. Reduction of the derived 2,239 figure by a like percentage would leave an estimated 1,639 local administrative employees in 1967.

Consistent with the established methodology of this study, a ratio of trend was established between the census reported data and the reported local public administration of the State. (Where no local annual data services were available State figures were used on the assumption that cyclical fluctuations in a larger data source would also be reflected in the smaller unit - see / 3 /. The results of this estimate are depicted on Chart XVIII. The resultant estimate for 1967 is 1,557 or 82 fewer (5 percent) than the rough estimate calculated above, but is almost precisely the same figures as found if the annual growth rate of 5.53 percent in the 50's were continued until 1967. If figured on the basis of the same ratio of employees to total population which existed in 1960, an estimate of 1,326 is derived, assuming an estimated population in 1967 of 92,000 as reported by the Bureau of Business and Economic Research. It is believed that this latter estimate is low, perhaps by as much as 8-10,000 which would increase the number to more than 1,440. It was concluded, however, that the ratio of trend figures were reasonable in terms of the limits of the overall study and such figure was used.

CHART XVIII

ESTIMATED ANNUAL EMPLOYMENT
IN LOCAL PUBLIC ADMINISTRATION
ALACHUA COUNTY
1950-1967



SOURCE: PLANNING DIVISION ESTIMATES

Education

The basic methodology for this study i.e. using ratio of trends to estimate annual employment by industry group etc.. worked least well with education of all industry group categories. This is primarily because no annual data series could be found which combined both higher and lower education counts of employment, as they were combined in the Census. Nor could a division of the census data be made, since the figures reported therein were usually much smaller than other counts found. It is assumed this is due to the classification of many university employees in other categories. After much study it was found necessary to depart from the usual ratio of trend established with the two Census periods and to establish a ratio with only the 1960 data. This single ratio was applied to annual data for the local school board and the university combined. It is believed that the combined series was basically consistent, establishment data even though the data was from two different sources.

The figures used for the University were as follows:

UNIVERSITY EMPLOYMENT
1960-1967

1960	6,836
1961	6,912
1962	7,771
1963	8,224
1964	8,558
1965	8,882
1966	9,385
1967	10,009

Source: (1) Data Supplied by the Comptrollers Office

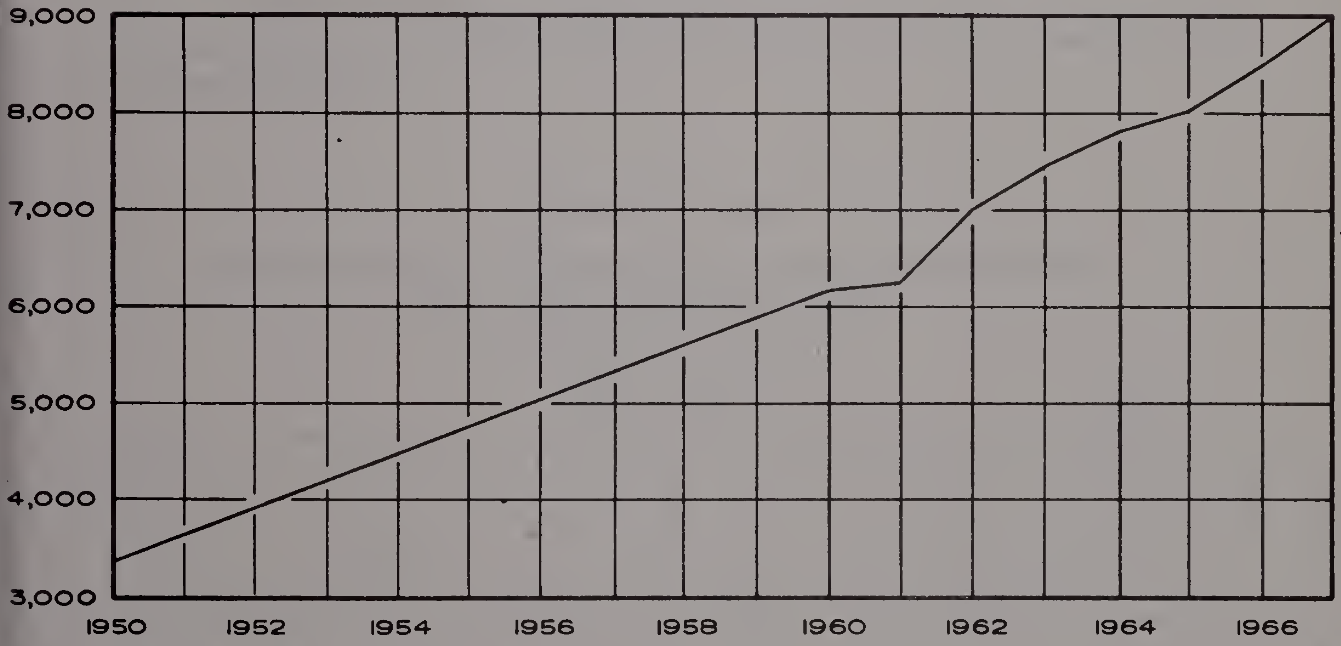
Data for the Alachua County School District were obtained from several sources. The Biennial Report of the Superintendent of Public Instruction lists all instructional and supervisory personnel. These data were available through 1966. (See Appendix Table E-1.) Data for April, 1957 and October 1962 were provided by the Census of Government. /31 / Finally, data for both instructional and service personnel for the last 5 years were obtained directly from school board records. The latter indicated that the total number of positions was about 1,500 last year. This is considerably lower than other estimates. After further checking it was determined that such other published data was frequently based on payroll records. Since many substitutes are employed by the Board on a part-time basis, frequently only working a few hours a month, and since some personnel were working at two different jobs with the school district, such as teaching a night course in addition to regular duties, the discrepancy was attributed to these factors.

The adjusted census reported industry employment in education was 3,359 for 1950 and 6,150 for 1960. This represents a net increase in this period of 83 percent.

It also shows a gain in the percent of all resident employment from 16.83 to 22.55 percent, reflecting both the growth of the county but more particularly that of the University. The estimated 1967 education resident employment is 9,031. Again, this estimate assumes a stable relationship between the resident count of the census and the establishment counts used to estimate current employment. Chart XIX shows the estimated annual employment for the years from 1950 to 1967, with the period from 1950 - 1960 a straight line projection.

CHART XIX

ESTIMATED ANNUAL EMPLOYMENT IN EDUCATION
ALACHUA COUNTY
1950 - 1967



SOURCE: PLANNING DIVISION ESTIMATES

Construction:

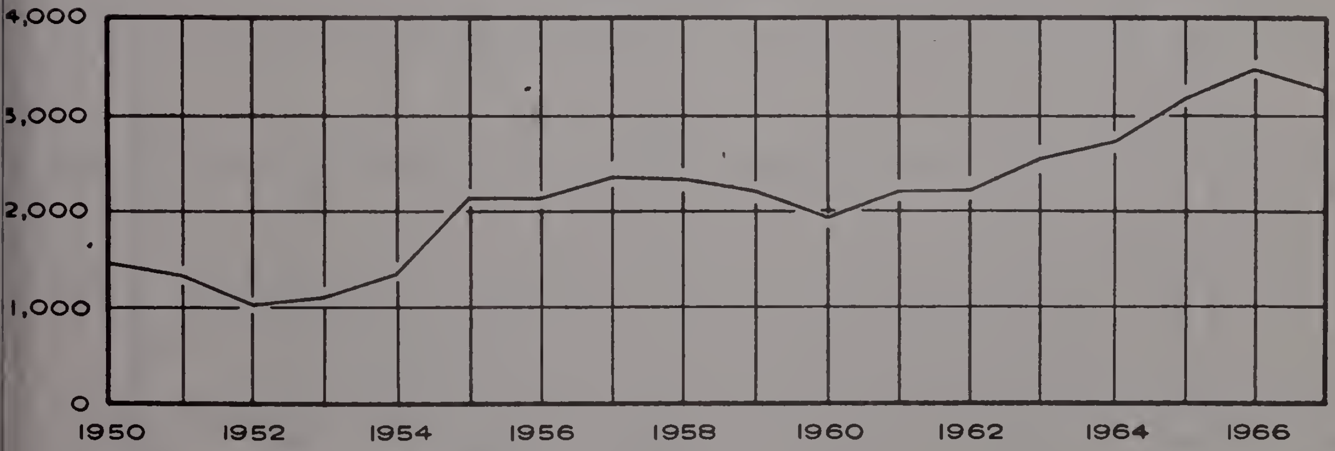
Employment in the construction industry was estimated to be 1,489 in 1950, 1,934 in 1960 and 3,279 in 1967. The first two figures represent the adjusted census total while the latter was estimated by a ratio of trend established with the reported employment covered by unemployment compensation and unemployment compensation for federal employees laws. Percentagewise, employment increased almost 30 percent from 1950 to 1960, and almost 70 percent from then until 1967.

Construction is generally very cyclical in nature as it is almost totally dependent on factors over which it it exercises no control. The state of the overall economy as reflected in interest rates, taxes, and decisions by government can and do determine the level of activity in building construction. In Alachua County, construction at the University of Florida normally accounts for the largest single source of activity in the construction industry. In recent years, however, the tremendous growth of apartment buildings has supplanted even the University construction. Table XII indicates the level of activity in the various sectors as measured by the value of new buildings constructed. The total value is also shown on Chart XXI to allow a general comparison of the trends as measured both by dollar value and estimated annual employment. The latter is indicated by Chart XX.

A high level of annual employment activity in this area is expected for the next few years as a total of about $12.4 million dollars in local school construction has been approved.

CHART XX

ESTIMATED ANNUAL EMPLOYMENT IN CONSTRUCTION
ALACHUA COUNTY
1950 -1967



SOURCE: PLANNING DIVISION ESTIMATES

TABLE XII

VALUATION OF AUTHORIZED* NEW NONFARM BUILDING CONSTRUCTION BY TYPE, ALACHUA COUNTY, 1960-1967

(Value figures in thousands of dollars)

		Privately Owned Buildings				Publically Owned Buildings	
Year	Total	House-keeping**	Non-House-keeping Residential	Non-Residential	Additions & Alterations	Education	Other
1960	14,564	8,712	551	1,151	1,055	2,532	563
1961	17,861	9,150	926	2,532	1,064	786	3,400
1962	15,561	8,251	25	2,966	1,532	1,731	1,056
1963	31,145	12,643	0	2,363	1,707	1,761	12,671
1964	28,083	11,390	3,100	2,660	1,026	8,317	1,590
1965	30,841	12,416	810	4,936	1,403	11,085	191
1966	30,841	12,035	536	3,704	1,723	10,650	2,193
1967	23,502	12,286	13	6,655	1,798	2,297	453

Source: Florida Statistical Abstract 1967 and 1968 /17/ Table 8.212

* Authorized: Building permit issued.

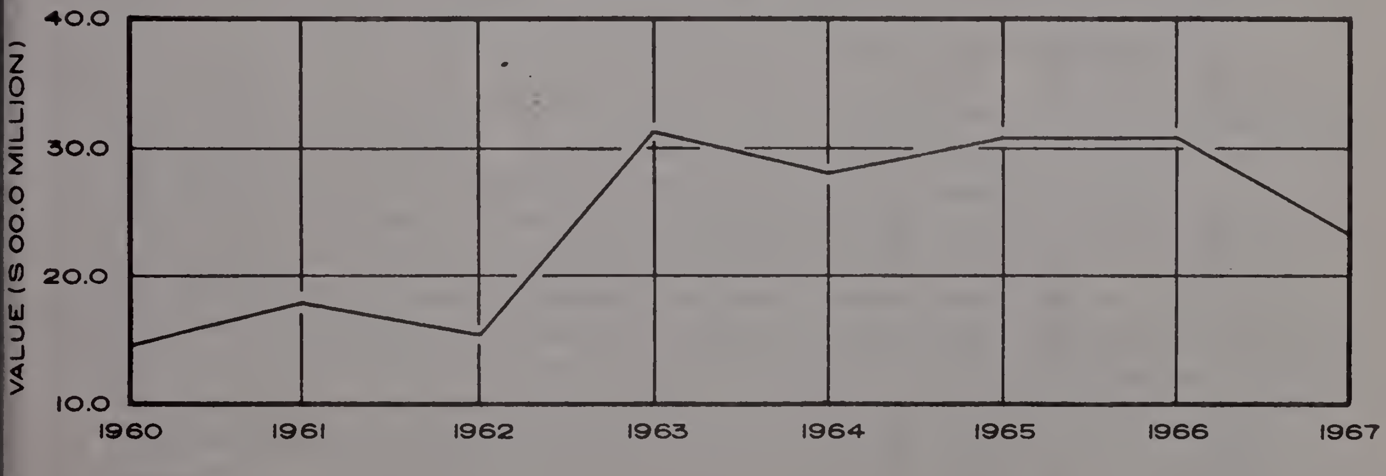
** Housekeeping units include single houses and units with kitchen facilities in structures with two or more such units.

CHART XXI

VALUATION OF NONFARM BUILDING CONSTRUCTION

ALACHUA COUNTY

1960 - 1967



SOURCE: [17]

PART VI. INCOME

The elemental structure of an area's economy can also be analyzed on the basis of personal income payments. This section examines the major source and components of personal income, not only for the purpose of relating income to the major employers but also to find certain income characteristics which are necessary for subsequent studies, particularly the commercial land use study.

Personal Income:

Personal income is income from all sources - private and governmental - including cash income and income-in-kind, for a given geographic area. It is the amount taken as the net after social insurance contributions are deducted but prior to the deductions for other taxes such as income or property taxes. There are five primary classes of personal income as follows:

1. Wages and Salary Income - includes cash and income - in kind to employees of business, firms, farms and governments.

2. Other labor income - primarily the contribution by employers to private programs for pensions, insurance, compensation for injury; (the so called fringe benefits) and military reservists pay.

3. Proprietors income - includes earnings of self-employed, owners of business, proprietorships or parternships, the net incomes of farmers and the like.

4. Property income - income from dividends, interests, rent and the like.

5. Transfer payments - payments from which no current productive efforts are given, such as pensions and unemployment compensation.

The personal income for Alachua County and Florida for selected years from 1950-1966 is shown in Table XIII. Personal income more than doubled from 1950 to 1960, from $57,024,000 to $121,573,000 whereas the population only grew by 32 percent in this period. The increase in personal income is far greater than would have been necessary to keep pace with inflation, indicating an improving economic situation. The increase from 1960 to 1966 was about 70 percent, generally keeping pace with the increase of the fifties. Altogether, total personal income has increased about 260 percent since 1950. At the same time the total personal income of Florida has increased 328 percent or better than four and a quarter times. The County is not keeping pace with the State in growth of personal income, nor has it improved its rank of 15th place among the 67 counties since 1960.

Wages and salaries are by far the largest category of personal income making up approximately 65 percent of the total. Other labor income - generally speaking the so called "fringe benefits" are the smallest with 3-4 percent of the whole, with proprietors and property income about even and transfer payments slightly smaller. Table XIV shows the actual percentage breakdown for the United States, Florida and Alachua County for the four (4) years between 1963 and 1966.

TABLE XIII

TOTAL PERSONAL INCOME, ALACHUA COUNTY AND FLORIDA
1950 - 1966

Year	Alachua County ($000's)	Florida ($000,000's)
1950	$ 57,024	$ 3,599
1952	61,015	4,554
1954	64,074	5,328
1956	85,301	6,972
1958	98,400	8,457
1959	113,908	9,384
1960	121,573	9,746
1961	128,024	10,253
1962	140,254	11,060
1963	161,080	11,865
1964	171,294	12,982
1965	196,196	14,132
1966	$205,857	$15,410

Source: / 17, Tables 5.210, 5.242, and 5.282 /

Table XIV shows that Alachua County closely resembles the average breakdown for the Nation while Florida does not. In the County and the nation approximately 65 percent of all personal income comes from wages and salaries with fringe benefits adding about 2 percent more in the County and about 3+ percent more in the United States. For Florida as a whole about 6-7 percent less comes from wages and salaries. About 17 percent of Florida's total income is derived from property income - reflecting perhaps the dividends and interest earnings of the retired population - whereas the County gets around 10-11 percent and the nation about 14 percent from this source. The State's higher percentage of transfer payments no doubt reflects the higher proportion of senior citizens living on pensions. The County gets slightly more of its income from proprietorships than do the State or the Nation. Again, however, the largest single source of personal income is wages and salaries at about 60-70 percent of the total.

TABLE XIV

PERCENTAGE BREAKDOWN OF TOTAL PERSONAL INCOME BY PRIMARY CLASS, ALACHUA COUNTY, FLORIDA AND THE UNITED STATES 1963-1966

Area & Year	Net Wages & Salaries	Other Labor Income	Proprietor Income	Property Income	Transfer Payments
Alachua County					
1963	63.5	2.0	15.0	11.2	8.3
1964	64.8	2.1	14.4	10.4	8.3
1965	65.9	2.2	13.1	10.8	8.0
1966	65.7	2.3	12.3	11.6	8.1
Florida					
1963	58.3	2.5	11.4	18.0	9.8
1964	59.9	2.5	10.9	17.5	9.2
1965	60.4	2.6	10.0	17.6	9.4
1966	61.0	2.7	9.2	17.4	9.7
United States					
1963	64.1	3.2	11.0	14.0	7.7
1964	65.3	3.3	10.3	13.9	7.2
1965	65.0	3.4	10.3	14.1	7.2
1966	65.4	3.5	9.9	13.9	7.3

Source: Derived from data found in /_7_/

Comparative Wages Paid by Industry Groups:

The basic/service concept of economic base analysis assumes that the ratio of these two types of employment will remain constant or at least be susceptible to easy derivation and projection over a forecast period. This does not mean, however, that major shifts in the composition of the overall employment picture will not occur. Quite the contrary is true, as illustrated by two examples from manufacturing industry employment in this area. The electronics industry was virtually non-existant in 1950, yet is one of the single largest components today, while lumber and wood products has shown a drastic decline over the same period. Thus, to a certain extent the decline in one industry has been replaced by the increase in another and the overall curve shows a natural upward growth.

Because such changes can and do occur, understanding of the composition or mix of the total employment picture is important to an understanding of an area's economy. Principally this is true because wage levels in different types of industry groups or even in the same basic category can vary widely. For example, since states with large employment in manufacturing generally lead the nation in income per capita, it is widely

believed that manufacturing is the key to raising the personal income level of a given area. While this is generally true to the extent that many manufacturing industries do pay comparatively high wages, it is also true that many others do not. Madelyn T. Kafoglis pointed out in an article in the Economic Leaflets in 1962* that at that time Florida's relatively low personal income was due in part to low paying types of manufacturing such as food and kindred products and lumber and wood products manufacturing.

The illustration above concerning the changes in the area's manufacturing employment has been a factor in an improving overall income picture in the County. Based on covered wages, manufacturing led the community in increased average wage from 1957 to 1967 at 55.7 percent, compared to an overall average increase of 42.4 percent.

Since changes such as this have occurred and can be expected to continue, it is important to know the relative wage structure of various industry groups. To provide this understanding a comparison was made based on the wages reported by the "covered" employment under unemployment compensation laws. This comparison is shown in Table XV. Because covered employment is the source for this table, it of course does not contain all the major employment components. Local government and the University employment are two critical groups not included, as well as the small firms with less than four (4) employees. The average wage was determined by dividing the total wages reported for the year by the average monthly employment. The total wages paid are shown in Table XVIII.

In addition, the annual wages so derived may not necessarily be comparable to the actual wage structure of any given industry. This is particularly true of the services and retail industry groups which contain many small concerns which may pay lower wages than the larger covered firms. Because of their overall numerical strength relative to total employment, this fact would lead to the conclusion that the average wage depicted is probably higher than actually is the case. On the other hand covered employment includes part-time employees which undoubtedly lowers the overall average for most industry groups. Despite these short comings it is believed that the table is reasonably indicative of the relative position of each industry group with regards the average wage for this area.

The table reveals that by far the highest wage paid is by the Federal government. The estimated average of $7,453. for 1967 is more than $2,000 higher than the next closest group - transportation, communications and utilities - and is more than double the lowest group - services. The average wage was $4,530 in 1967, which amount is exceeded by every group except retail trade, services, and probably agriculture. This general pattern has held about the same for the period shown, with the exception that wholesale trade dipped slightly below the average in 1957.

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* /24 / Vol. XXI, No. 1 January, 1962

TABLE XV

ESTIMATED AVERAGE ANNUAL WAGES OF WORKERS COVERED BY FLORIDA UNEMPLOYMENT COMPENSATION LAWS AND UNEMPLOYMENT COMPENSATION FOR FEDERAL EMPLOYEES 1957-1967
ALACHUA COUNTY

Industry Group	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967*
Average All Industries	$3,182	$3,360	$3,555	$3,684	$3,806	$3,677	$3,828	$3,966	$4,050	$4,532	$4,530
Construction	3,573	3,720	3,886	3,909	4,071	3,911	4,051	4,020	4,312	4,990	4,954
Mining	N/A	N/A	N/A	N/A	N/A	3,132	4,047	3,695	4,202	4,835	5,481
Manufacturing	3,351	3,740	4,039	4,210	4,528	4,182	4,470	4,434	4,486	5,045	5,219
Transportation, Communications and Public Utilities	3,832	4,095	4,465	4,466	4,774	4,693	4,652	4,775	4,827	5,343	5,296
Wholesale Trade	3,110	3,675	3,817	3,790	3,846	3,801	4,076	4,222	4,162	3,759	4,802
Retail Trade	2,656	2,709	2,824	2,948	3,020	3,069	2,974	3,140	3,308		3,520
Finance, Insurance, & Real Estate	3,939	4,078	4,331	4,632	4,517	4,322	4,431	4,760	4,965	5,170	5,328
Service	2,391	2,416	2,592	2,691	2,864	2,807	3,006	3,056	3,015	3,402	3,430
Federal Government	5,128	5,255	5,408	5,622	6,001	5,756	6,007	6,607	6,676	7,476	7,453
Agriculture	N/A	N/A	N/A	N/A	N/A	2,759	2,766	2,977	3,179	3,474	N/A

* Based on 1st Quarter only vs. 12 Months for other years.

Source (7), Calculated by dividing total reported payroll by the average of the monthly reported number of employees.

This fact leads to the conclusion that in the overall wage structure of a community most industries tend to maintain their relative position with regards to the average wage of the community. The importance of this conclusion is in the corollary that major changes in a significant component of that community wage structure will result in changes in all other components in the same direction. Thus in projecting the future income structure of the community the effect of a given known change - such as a decreasing or increasing wage structure in a given industry range - can be taken into account.

The relative stability of the wage structure is clearly shown in Chart XXII. In this Chart, the average covered wage of all major industry groups remain relatively constant to the overall average wage of all covered employers. As can be seen, in no case does any single group vary more than ten percent from the average of which it is a part. Even this small variation can be attributed in part to the reaction time necessary for other groups to adjust wages in order to compete for workers. It should be noted in retrospect, however, that these conditions are symtomatic of a community with very, very little unemployment, and might not hold true should this not be the case.

Industry Sources of Personal Income:

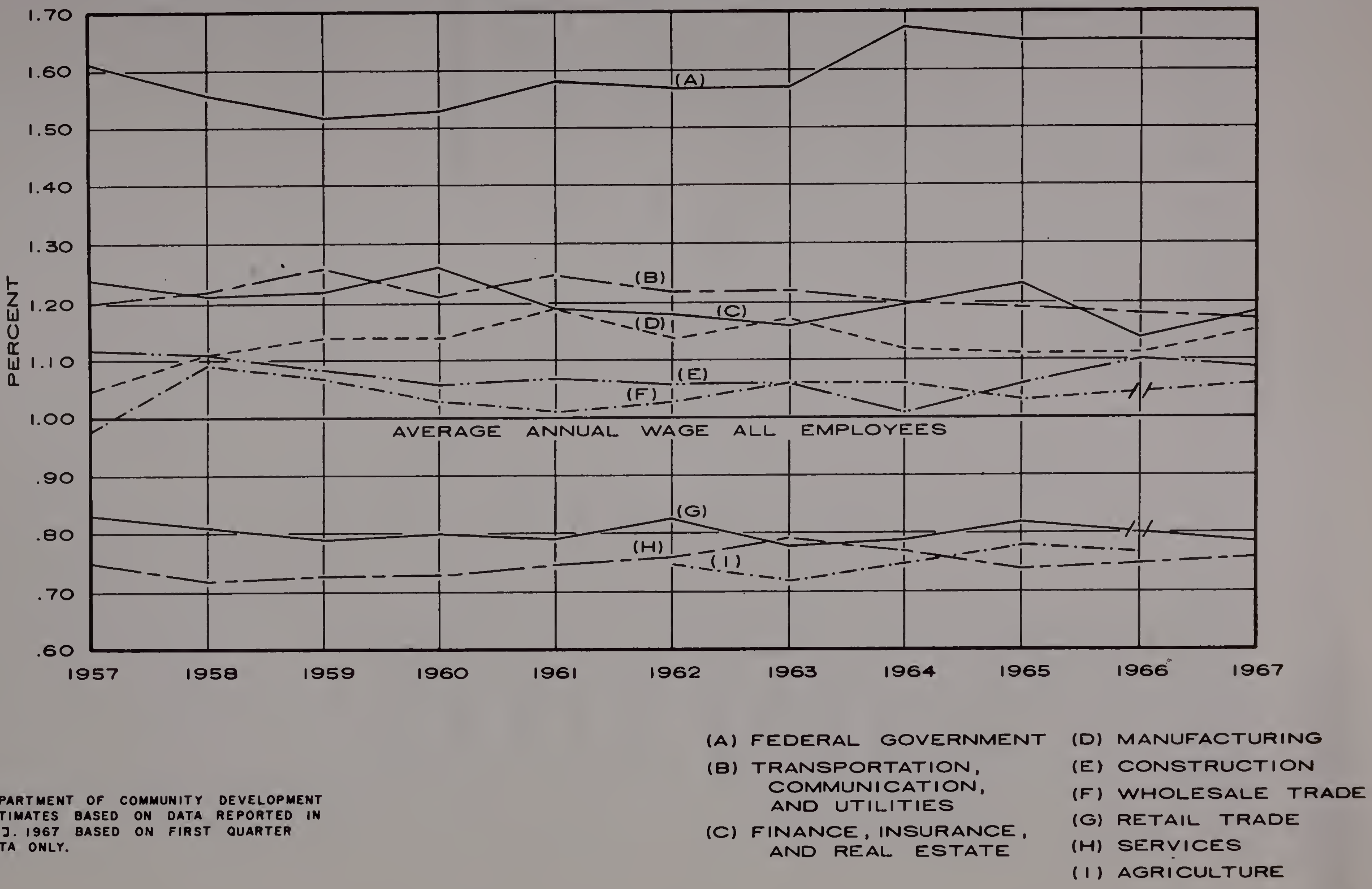
Employment was used in this study, as in most economic base studies because it is the unit of measurement on which data is most easily secured. Were more complete and reliable data available, income would perhaps be a better unit, as it is more directly related to economics. Employment, while providing a reasonable indication, does not reveal the total impact of a given industry's importance to a community. Not only do wages vary from industry to industry, as was pointed out in the preceeding section, but the total flow of money has a definite impact on the community.

It is beyond the scope of this study to analyze all input and output of all industries of the County. However, a very generalized indication of the elemental structures and of the relative importance of each industry group can be obtained by examining the income received from such industries.

Table XVI shows the total personal income received by civilians for participating in production for 1966, for the County and the State. Generally speaking, income from wages and salaries, other labor income, and proprietors income are assumed to be compensation for participation in current production, while transfer payments and property income are not.

CHART XXII

RELATIONSHIP OF ESTIMATED ANNUAL WAGE BY INDIVIDUAL INDUSTRY GROUP TO THE ESTIMATED ANNUAL WAGE OF ALL REPORTED EMPLOYEES COVERED BY FLORIDA UNEMPLOYMENT COMPENSATION LAWS AND UNEMPLOYMENT COMPENSATION FOR FEDERAL EMPLOYEES 1957 — 1967



SOURCE: DEPARTMENT OF COMMUNITY DEVELOPMENT ESTIMATES BASED ON DATA REPORTED IN [7]. 1967 BASED ON FIRST QUARTER DATA ONLY.

TABLE XVI
TOTAL PERSONAL INCOME RECEIVED BY CIVILIANS FOR PARTICIPATION IN PRODUCTION, BY MAJOR SOURCE, ALACHUA COUNTY AND FLORIDA

1966
(In thousands of dollars)

Source	Alachua	Florida
Agriculture	$ 8,017	$ 490,000
Mining and Fishing	446	91,700
Contract Construction	14,430	917,000
Manufacturing	18,638	1,808,000
Wholesale & Retail Trade	26,196	2,302,000
Finance, Insurance & Real Estate	7,154	138,000
Transportation, Communication, & Public Utilities	6,709	880,000
Services, Trades & Professional	23,960	2,056,800
Government	66,967	1,696,000
Other Private Industry	303	29,500
Totals	$172,820	$11,009,000

Source /17/ Table 5.372

Because of this distinction regarding the classes of income, it is not surprising to find that Alachua County receives a much higher percentage of its total income from production efforts than does the State as a whole. Much of the property income and even more of the transfer payments of the State represents income of retirees, of which the State has a much higher number percentage wise than does the County. Since 1960, the County has averaged 81-84 percent of its income from these productive sources, whereas the State has averaged around 71 percent.

Employment in government dominates the County employment force. It is no surprise therefore to see that government is the single largest source of income. Table XVII, which shows the percentage distribution of productive source income from 1960 to 1966, reveals that from 38 to 40 percent of same came from government. In 1960 it stood at 39.7 percent as contrasted with 33+ percent of the resident employment. This would lead one to conclude that the wages paid in this industry group are higher than average, since a smaller percentage of the employment force received a larger percentage of the income under consideration. This assumes of course that non-productive income is proportionately distributed among employees of all industry groups. It should be noted, however, that these and other estimates of personal income in this study are derived in part from establishment data, as opposed to purely residents income. The government portion of the total labor force as estimated by the Florida Industrial Commission was 39.9 percent in 1960.

The second highest percentage comes from wholesale and retail trade with about 15 percent of the total. This compares with the estimated 18 percent of the resident employment in 1960. Here again, the difference would tend to support the general belief that this is a category with relatively low wages.

The only other categories with more than ten percent of the total were manufacturing and services. Manufacturing appears to have lost ground over this period, but it is not known if the miss-classification which showed up in the employment figures is also represented here. Services showed an increase in its percent of the total from 10.1 to 13.9. This is in keeping with the rising trend found in employment, but direct comparison cannot be made since some government employees are included in the services category of the census.

Generally speaking, the distribution of income from production efforts compares closely with the distribution of employment (See Table III). The differences between the two are in keeping with what would be expected from estimates of the relative wage structure of the industry groups. Those groups with a higher wage structure, such as finance, insurance and real estate, have a smaller percentage of the employees than its share of the productive income.

Finally, this examination of income from participation in production leads to the same general conclusions which could be drawn from the study of employment. The base support of the community comes primarily from government employment,

TABLE XVII

:CENTAGE DISTRIBUTION OF INCOME RECEIVED BY CIVILIANS FOR PARTICIPATION IN PRODUCTION BY MAJOR SOURCE, ALACHUA COUNTY AND FLORIDA

1960-1966

ce and Area							
:hua County							
culture	6.0	5.6	7.2	7.5	6.6	5.2	4.6*
ng & Fishing	0.3	0.2	0.2	0.3	*	0.3	0.3
ract Construction	6.8	6.3	6.4	6.8	7.2	7.3	8.3
ufacturing	11.5	11.1	11.3	10.4	10.1	8.9	10.8
lesale & Retail Trade	15.8	15.4	16.1	16.7	17.4	16.1	15.2
nce, Insurance, & Real Estate	4.9	5.0	5.1	4.7	4.6	4.1	4.1
sportation Comm. & P. Utilities	4.6	4.3	4.4	3.7	3.7	3.7	3.9
ices, Trades & Professional	10.1	10.3	11.4	12.6	12.8	14.0	13.9
ernment	39.7	41.5	37.7	37.1	37.6	40.3	38.8
r Private Industries	0.3	0.3	0.2	0.2	*	0.1	0.1
als	100.0	100.0	100.0	100.0	100.0	100.0	100.0
amount received ($000's)	$99,149	$107,119	$115,364	$134,474	$145,070	$164,664	$172,820
da							
culture	6.3	7.2	6.3	6.2	6.2	4.9	4.5**
ng & Fishing	0.8	0.8	0.8	0.9	0.8	0.9	0.8
ract Construction	10.8	9.1	8.9	8.9	9.3	8.9	8.3
facturing	13.7	14.6	14.9	14.9	14.9	15.7	16.4
esale & Retail Trade	23.5	22.4	23.2	23.0	22.8	20.9	20.9
ce, Insurance & Real Estate	7.8	7.8	7.7	7.6	7.3	6.8	6.7
portation, Comm. & P. Utilities	7.8	7.8	7.5	7.4	7.4	7.7	8.0
ces, Trades	16.2	15.9	16.4	16.4	16.3	18.8	18.7
rnment	12.8	14.1	14.0	14.5	14.8	15.2	15.4
r Private Industry	0.3	0.3	0.3	0.2	0.2	0.2	0.3
tals	100.0	100.0	100.0	100.0	100.0	100.0	100.0
amount received ($000,000's)	$7,074	$7,326	$7,858	$8,404	$9,245	$10,057	$11,009

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s than 0.05 percent

eliminary

:e: /17/ 1968 Tables 5.352 and 5.372

with manufacturing second in importance. These are balanced by the support sector -- services and retail trade primarily. These four groups make up the major proportion of the income of the community.

Payrolls of Workers Covered by Unemployment Compensation:

One last look at the relative importance of various industry groups is possible by examining the payroll data included in the reports for unemployment compensation purposes. These are shown in Table XVIII for the years 1960-1967. Unfortunately, the major source of employment - government -is not represented in this table. However, the breakdown is more detailed than that provided in the preceeding section on productive income and gives some idea of the actual total dollars expended for wages by the major industry groups of the county.

Income Per Capita:

Income per capita is the total personal income of a given area divided by the population of that area (usually less inmates of institutions). Like personal income, per capita income has increased considerably over the past few years in both the state and the county. It has not kept pace with the rate of increase of total personal income, indicating that population has increased faster than total personal income.

Per capita income for Alachua County, the United States, Florida and the counties adjoining Alachua is shown in Table XIX. The County per capita income increased by 113 percent from 1950 to 1960 and a total of 134.4 percent from 1950 to 1966. In the same period (1950-1966) per capita income for Florida rose by 104 percent and the United States by 98 percent, indicating that the County has closed the gap somewhat with the State and national averages. This is better illustrated by Chart XXIII. As of 1966 the County still remained below the state average by some $272. and the United States by $621. At the same time Florida was some $349. below the United States average and has not appreciably closed the gap between it and the United States over this period.

Alachua County exceeds the average per capita income of the immediate seven adjoining counties by a substantial margin, although individual counties may have exceeded the Alachua average on various dates. Marion County, for example, exceeded Alachua prior to 1959 but has lost ground considerably since that time.

It is assumed by many that the per capita income of this area is lowered by the presence of the University students. However, a study of University student income and expenditures by Dr. Arvid A. Anderson /26 / revealed a mean income of only slightly less than $200. per student per month. This would indicate that this overall income rate is not greatly different than the per capita income, even though the earnings for other employed persons is much greater than the average students income. In addition, expenditures of students would vary from the typical family income.

TABLE XVIII

TOTAL ANNUAL PAYROLLS OF WORKERS COVERED BY UNEMPLOYMENT COMPENSATION LAWS
ALACHUA COUNTY, 1960-1967

Industry Group	1960	1961	1962	1963	1964	1965	1966
Total All Industries	$35,621,217	$38,181,334	$42,892,210	$49,156,779	$53,967,095	$60,142,709	$68,396,031
Agriculture, Forestry, & Fisheries			342,754	359,536	377,137	428,954	417,400
Mining			223,935	324,418	329,577	386,961	502,265
Contract Construction	4,298,621	4,661,730	5,338,732	6,778,816	7,751,383	9,749,029	12,008,507
Building Construction, Govt. Construction	1,553,199	1,622,114	1,848,844	2,097,590	2,573,370	3,403,100	4,581,322
Other Contract Construction	2,745,422	3,039,616	3,489,888	4,681,226	5,178,013	6,345,929	7,427,185
Manufacturing	10,820,594	11,234,094	12,304,592	13,270,472	13,660,251	13,038,531	16,652,690
Food and Kindred Products	3,390,970	3,437,818	3,561,672	3,813,314	4,026,322	4,043,461	4,085,314
Lumber & Wood Products	1,703,637	1,649,497	1,812,357	1,930,042	2,034,859	2,044,389	2,358,087
Electric Machinery, Equipment and Supplies				4,813,368	4,630,329	3,852,306	7,005,234
Other Manufacturing	5,725,987	6,097,279	6,930,563	2,713,248	2,968,741	3,098,375	3,204,055
Wholesale Trade	2,136,641	2,336,294	2,531,718	3,455,896	4;208,872	5,559,130	3,312,946
Retail Trade	8,132,751	8,547,543	9,499,793	10,484,388	11,646,341	13,802,973	15,706,802
Food	912,705	982,158	1,123,356	1,238,868	1,484,140	1,845,710	2,140,924
Eating & Drinking places	956,863	1,035,489	1,043,134	1,223,174	1,540,391	1,817,055	2,120,388
Other Retail	6,263,183	6,529,896	7,333,303	8,022,346	8,621,810	10,140,208	11,445,490
Finance, Insurance, Real Estate	2,618,870	3,073,664	3,478,360	4,063,575	4,189,990	4,434,248	4,687,821
Banking	694,756	790,908	874,550	932,662	1,082,406	1,201,150	1,319,844
Insurance carriers	857,542	860,320	1,342,468	1,717,484	1,664,665	1,798,037	1,741,791
Other	1,066,572	1,422,436	1,261,342	1,413,429	1,442,919	1,435,061	1,626,186
Services	2,921,101	3,204,675	3,926,378	4,433,355	4,774,975	5,202,862	6,026,392
Hotels, etc.	270,164	351,062	379,766	351,716	451,652	547,274	610,011
Personal Services	871,913	870,669	943,574	1,010,149	1,090,210	1,263,691	1,371,785
Other Services	1,779,024	1,982,944	2,603,038	3,071,490	3,233,113	3,391,897	4,044,596
Federal Government	2,127,383	2,416,868	2,663,508	3,062,254	3,840,242	4,113,086	5,312,244
Other	529,827	515,542					

Source: /7/ Note: Totals for Electronic Machines Equipment and Supplies, Lumber and Wood Products & Wholesale Trade were effected by a reclassification which occurred between 1965 and 1966.

TABLE XIX

INCOME PER CAPITA
Florida, the United States, Alachua and Surrounding Counties, 1950-1966

Year	Florida	United States	Alachua County	*Surrounding Counties
1950	$1,281	$1,496	$ 999	$ 716
1952	1,461	1,733	1,072	854
1954	1,539	1,785	1,093	881
1956	1,769	1,975	1,317	1,063
1958	1,850	2,068	1,384	1,183
1960	1,950	2,215	1,678	1,241
1961	1,970	2,264	1,631	1,324
1962	2,051	2,368	1,723	1,448
1963	2,145	2,455	1,950	1,589
1964	2,287	2,586	2,017	1,601
1965	2,423	2,760	2,269	1,667
1966	2,614	2,963	2,342	1,720

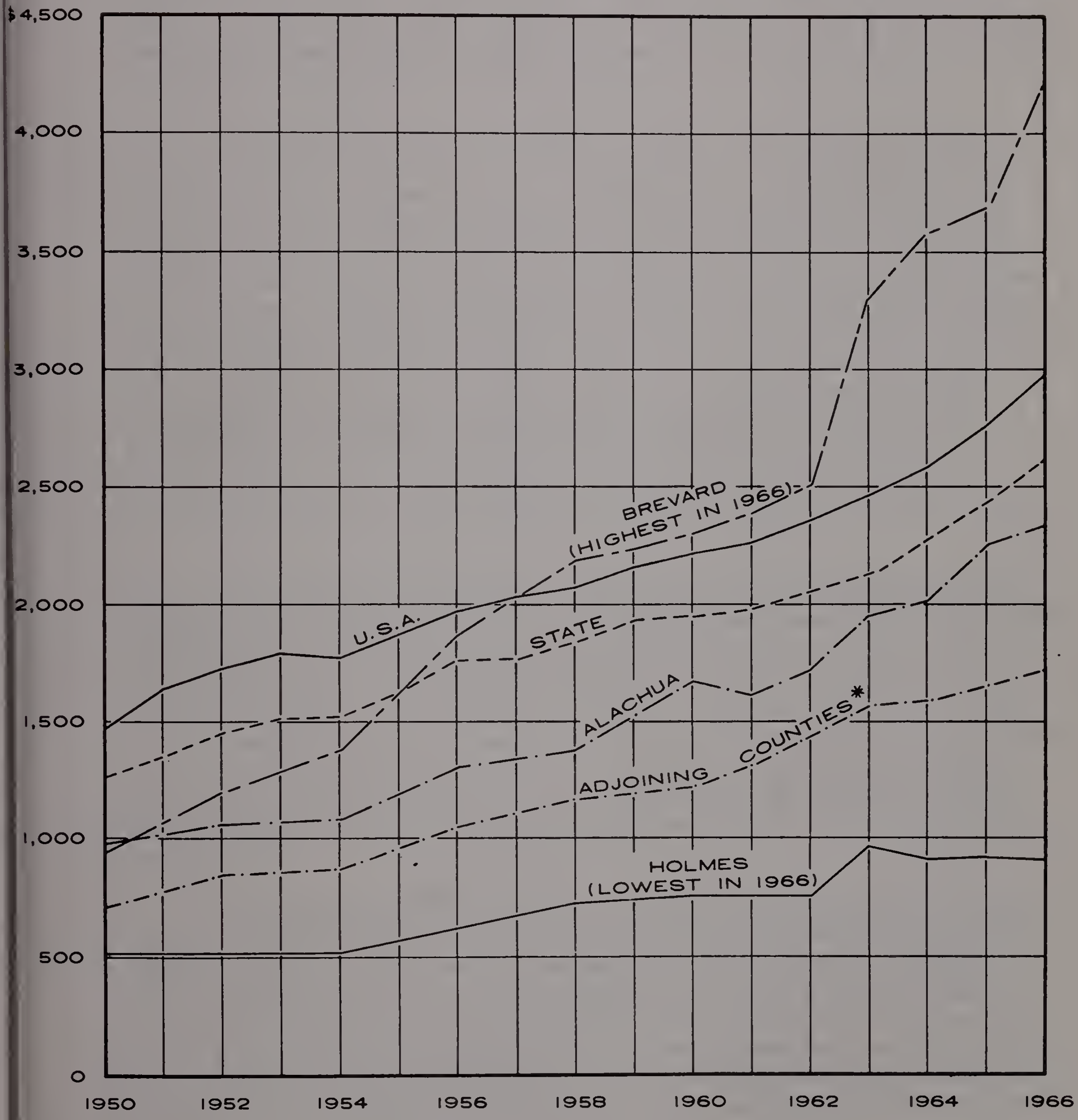
* Average of Bradford, Columbia, Gilchrist, Levy, Marion, Putnam and Union Counties

Source: /23_/ and /17_/

Chart XXIII also shows the highest and lowest per capita counties in the state. Brevard, with its highly paid scientists and engineers associated with the space effort is by far the highest paid, even much higher than the United States average. The lowest, Holmes County, is located in the Florida Panhandle with basically a rural agricultural economy. Alachua was ranked 23rd in 1960 and 22nd, 15th and 20th in 1964, 1965 and 1966 respectively, out of the 67 counties in Florida. This is contrary to the expressed opinion of many residents who feel this area was one of the highest income areas in the state. Since the outlying areas in the county have a much lower income level, that is, they are more typical of the low income agriculture economy than the immediate Urban Area of Gainesville, comparison on that basis would no doubt place the latter nearer the top. However, it should be kept in mind that almost three-fourths of the people in the county are already figured in this per capita estimate and the remainder could not lower the total very much. In fact, if the one quarter rural population were deducted from the county average at the per capita income rate of the seven surrounding counties, the remaining per capita would be raised by only $138. and its rank raised to 14th. In terms of actual total personal income Alachua has ranked about 15th from at least 1960.

CHART XXIII

INCOME PER CAPITA
UNITED STATES, FLORIDA, ALACHUA AND SELECTED COUNTIES
1950 — 1966



SOURCE: [23] TABLE 5, AND [17] TABLES 5.060 AND 5.122

* BRADFORD, COLUMBIA, GILCHRIST, LEVY, MARION, PUTNAM, AND UNION

Average Household Income of Alachua County:

In order to understand the effect of the total personal income on a community, it is necessary to establish how that income is earned, distributed, and how it is expended. The sources of income earnings were discussed earlier in this report. The latter two points are particularly important to the commercial land use study as future needs for such land is generally based on the expected expendable dollars which will be available for the purchase of goods and services.

While per capita income is an excellent measure for depicting the overall growth in income, or economic welfare of a community, it is a hypothetical figure and actual income is neither earned or expended on that (a per capita) basis. The most common basis for studies of consumption or income disposal is the family or the household unit. Generally the latter is used because of the availability of statistics relating to the number of same as opposed to the more elusive count of actual families for a given area. Analysis of Gainesville or Alachua County on the basis of average household income is complicated greatly by the presence of the number of occupants of group quarters. Since these people do not reside in standard household units but do add to the total income of the community; and since average household income is determined by dividing total personal income by total number of households, the typical average household income for such areas as Gainesville usually are greatly inflated. Futhermore, the consumption or income disposal characteristics of such persons differ drastically from the standard household on which most studies are based.

The census of population is a major source of income information. Unfortunately the last census was conducted in 1960, and the income data collected was for the year 1959. In addition to the statistics being outdated, such data is usually found to be understated. It is based on replies to the census questionnaire and is therefore a reflection of what a person thinks his income was, and not on actual records. Frequently, minor sources of income are not included in a persons recollection. Income "in kind" such as free rent or consumption of home grown farm products is not included. The form of such data has other limitations for the uses of this study. For example, median family income is reported, but for a study of the money available for expenditures on goods and services, average household and/or total income would be much better statistic.

Median family income does however, provide an excellent means of comparison of the relative economic status of the people of an area relative to time and to other geographic areas. The earlier planning study on population /27 / examines family income at some length. Pertinent findings include the fact that the county median family income was lower than the central city of Gainesville, (composed of the old City Limits) $4,471 to $4,702 and considerably lower than that of the Gainesville Urban Area which stood at $5,302. By 1967 the Urban Area family income was estimated to have increased to $7,000 and the County was estimated to be at $6,250 /29 / by 1968.

Average household income is equal to the total personal income of all persons living in households divided by the number of households. The total personal income for Alachua County in 1959 was $113,908,000*. If divided by the total number of households, the apparent average income would be $5,837; the per capita income $1,538. This average household income figure is distorted, however, to the degree of that amount of income added to the total personal income by residents of group quarters. They, of course, are not occupants of households. Therefore, to establish a true household income it was first necessary to estimate the personal income of group quarter residents and subtract this amount from the total County personal income.

By far the greatest percentage of the occupants of group quarters were students at the University. In total there were 8,509 group quarter residents with 6,597 students and 1,846 inmates of institutions in 1960. Of the latter about 1,600 were believed to be residents of Sunland. It is therefore reasonable to assume that the only significant personal income which could be subtracted from the total would be of the University students.

A study was conducted in 1962 /28 / and another in 1967 /26 / of student expenditures and incomes at the request of the student newspaper. These studies reported monthly incomes of $125 in 1961 and an average of just under $200 for 1967. A straight line projection would indicate an average of approximately $100 in 1959. Estimating an annual stay of 10 months (to average in the summer students) the total annual student income is $1,000. When multiplied by the total student occupants of group quarters this would amount to $6,597,000. for 1959. This amount was then deducted from the total personal income leaving a new total personal income of households of $107,311,000. When divided by the number of households, 19,516 the resulting average household income would be $5,499.

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* See /24 / Vol. XXII No. 1 January 1963. Note: the total personal income data used herein was prepared by the Bureau of Economic and Business Research, University of Florida. It is based at least in part on statistics regarding income earned in the county i.e. establishment data and does not necessarily represent actual income. Therefore, since it appears more people from outside the county work in the County than the reverse, it can be assumed that this total is likely on the high side. To what extent this is true is impossible to tell as the census did not give an actual figure of total income. However, if you multiply the indicated number of income recipients, 39,422, by their mean income $2704 an approximate total of $106,597,088 is derived for 1959 on the basis of census data. This compared with the total personal income listed by the Bureau of $113,908,000 which is six percent greater. However, since respondents under 14 were not asked about their income, it was felt that the difference was not as great as apparent. This could happen if the smaller number who commute from this county have greater income as a group than do those commuting into the County.

The same basic process was repeated to find the estimated average household income for January, 1968. The total personal income for 1967 has not yet been calculated by the Bureau of Business and Economic Research. The 1966 estimate was $205,857,000. On the basis of the average percentage increase per year since 1960, an estimated personal income for the county of $224,074,000 was derived.

The next step was to estimate the number of occupied dwelling units. The 1960 census count of housekeeping units was 21,933. Through 1967 a total of 8,956* units had been added, but since this figure was based on authorized units (building permits) it did not take into account losses by demolition or from natural disaster. Therefore, certain modifications were made to the basic figure, based on previous studies made of the housing characteristics of the Urban Area. In addition it was found that six percent of the total housing supply in the urban area was in mobile homes. A like amount was added to the county supply. From this was deducted an estimate for vacancies and demolition. The final net estimated occupied dwelling unit count for the County was 28,473. The corresponding unit count was 21,204 dwelling units for the Urban Area.

Next it was necessary to deduct from the total personal income an amount to equal to that added by occupants of group quarters. The 1967 winter trimester study of student expenditures and income revealed that the average student had slightly less than $200 income per month. When multiplied by the estimated number of residents in group quarters, 8,025, times an estimated stay of 9 months** the estimated total income for said residents is $14,445,000.

Deducting this amount from the estimated total income leaves $209,629,000, which when divided by the number of occupied households leaves an estimated household income of $7,360. for the county at the end of 1967 or for January, 1968. By the same methodology an estimate for January, 1967 (based on the 1966 personal income) of $6,766 was derived. That figure has the advantage of being based on a given total personal income vs. an estimate for the former, and could therefore be considered slightly more reliable for other purposes.

Income of the Gainesville Urban Area:

For purposes of the commercial land use study it was necessary to calculate the income of the Urban Area in addition to the above county estimates. This was accomplished by the following steps:

1. Special Table PH-3 of the 1960 Census gives the number of families in various income ranges for each major census enumeration district of the

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* /17/ Table 8.245

** Averaging of the enrollment for this year yielded an average of slightly over 9 months. This is lower than the earlier 10 month figure due to a change over to a tri -mester system.

county. An approximate average income for each such division was found by multiplying the middle of each range by the number in that range, summarizing the results and dividing by the total number of families in that division.

2. The estimated number of families in each census division who lived in and outside the Urban Area was calculated on the same percentage basis as the number of households in each as determined by the earlier Population Study /27 /.

3. The estimated number of families in each census division was then multiplied by average income as found in Step #1 and the results totaled for the County. This total was then divided by the number of families in the Urban Area to give the average family income of the Urban Area.

4. The total income found in #3 was deducted from the total found in Step #1 and divided by the number of families in the County outside the Urban Area, giving an estimated income for same.

The result of the above calculations is an estimated average family income for the various areas as follows:

TABLE XX

ESTIMATED AVERAGE FAMILY INCOME
1960

Total County	$5,686.00
Urban Area	$6,154.00
County Outside Urban Area	$4,557.00

Source: Department of Community Development Estimates

These estimates formed the base for calculating the 1968 Urban Area share of the total county personal income dollar. Two assumptions were necessary for such calculations: One, that the disparity in 1960 between the average family income of the Urban Area and the area outside continues until the present; and two, that the average household income for both dates is proportional to the family income for said dates. Since average household income had been calculated for both 1960 and 1968, the average, and hence total income, of the areas were determined by simple ratios of proportion.*

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* Note: In calculating total income of residents outside the Urban Area both by direct ratios and by first finding the urban area total and dividing the remaining income available by the estimated number of households, a slight discrepancy of

(continued)

TABLE XXI

ESTIMATED HOUSEHOLD INCOME, JANUARY 1, 1968

	Average	Total (000's)
Total County	$7,360	$224,074
Urban Area	$7,965	$183,335**
County Outside Urban Area	$5,596	$ 40,739

Source: Department of Community Development Estimates

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about $2 million is derived. This amount is less than one percent of the total income and does not represent an intolerable error. It could well be that the estimated total income of the county for 1967 is high by this amount, or student income slightly overstated, or the rural areas could have slightly closed the gap with Urban Area income. It was generally agreed that the larger amount for the Urban Area was most likely correct and such was used.

** Includes the estimated $14,445,000 in income from group housing residents.

PART VII
PROJECTIONS OF RESIDENT EMPLOYMENT AND INCOME 1975-1980

In the preceeding section an estimate of the total annual employment from 1950 to 1967 was made for each major industry group listed in the two previous censuses, and for which an annual series of employment could be found. In addition, the income structure of the community was analyzed and estimates of the average household income of the county and the Gainesville Urban Area calculated.

In this section the estimated annual employment is projected to 1975 and 1980. The basic methodology for doing same was to determine the "best" regression relationship between time and the annual employment, fit a linear equation to the data curve, and add a quadratic term where such would improve the fit. Basically, those data curves which were very consistent in one direction or the other were projected by the method of least squares. Where the industry appeared to be increasing or decreasing at an accelerated rate, the equation was adjusted to take such movement into consideration.

While this methodology formed the base of the projections for this study, each industry group was examined individually to determine whether or not the trend shown by the mechanical projection corresponded to what logically appeared to be the future of such industry. The latter was based on interviews with many of the largest employers in each group as well as a review of the general trend for the industry nationally. In most cases one or two additional projections were prepared as supplementary to the first equation. At this point the most logical projection was selected for inclusion in the "judgement model" which represents the total best forecast of future employment in the county.

The future income of the County was projected on the basis of comparing the relative wages of each industry group in 1967 with the projected employment mix in 1975 and 1980. This was then increased by the projected overall rise in income for the Southeastern States.

Agriculture, Forestry and Fisheries:

The two most basic characteristics of agriculture in this country have generally been an ever increasing productivity coupled with continually declining farm employment. This has not been the case with Florida, which has shown increases in both productivity and employment, but it has held true for the southeastern states and the nation as a whole. (See Table VII)

It was pointed out in the earlier discussion of recent trends that agriculture in Alachua County does not mirror Florida's characteristics. It was thought therefore

that the overall trends in the South would be more indicative of what was happening in the county than would an examination of state employment. The ratio of trend using employment in the South for interpolation is generally very smooth and varies only slightly from a straight line projection of the two census points. See Chart III. The last point appears to be very low, and by its mechanical nature does not take into account the bottoming out in employment reported by the Florida Industrial Commission for the 1963-65 period.

Taking all of these factors into account, several alternative projections were considered for the target years. First considered was the direct projection by regression equations of the annual employment curve of Chart III. The results were predictable. Since the drop in employment from 1950 was so drastic with so little fluctuation, projection naturally resulted in a continuation which by 1975 showed only 507 employees and by 1980 only 288. These estimates were rejected as being too low.

The consensus was that if the decline in the employment rate had not already "bottomed out" it would do so, and any further decline from that point would be at a far more modest rate. It was therefore concluded that a projection based on the rate of decline nationally or in the South would be more appropriate than the results of the direct mechanical projection.

The National Planning Association prepares estimates and projections for various economic indicators such as employment, gross national products, etc... These are reported in a publication entitled National Economic Projections Series which unfortunately is available only to members of the association. However, indices of employment based on their data were reported in another economic study prepared by the Bureau of Business Research of Ohio State University for Columbus, Ohio. /38 / The latter provided the source used in this study.

Two indices are reported, one based on the NPA projections with 1960 as a base (equal to 100) and one using 1965 estimates as the base. Therefore two different projections could be derived depending on which base is used. These were as follows:

	Estimated		Projected	
	1960	1965	1975	1980
Base 1960	2324	--	1515	1354
Base 1965	--	1443	1140	1018

Another estimate was prepared by a ratio of trend with the projected employment reported by Maddox et al, in The Advancing South. /14 / Only 1975 was projected, and the ratio with the census dates and that year resulted in the estimate of 1319 for that date. This falls approximately in the middle of the two NPA based projections above.

The actual rate of decline in employment for the last ten years (1957-1967) in the South as reported in Agriculture Statistics was about 4.8 percent per year. If this rate were applied to the 1960 census adjusted count for Alachua County and carried forth to 1975 the total employment would be 1,121; for 1980 the total would be 877.

In summary, the following additional projections were made for Alachua County:

Basis for Projections	1975	1980
U.S. Rate (NPA 1960 Base High)	1515	1354
Ratio with Advancing South	1319	NA
U.S. Rate (NPA 1965 Base) (Judgement Model Forecast)	1140	1018
Current Annual Compound Rate, South	1121	877
Mathematical Projection	507	288

The immediate past history of employment in Agriculture, Forestry and Fisheries appears to indicate a decline in the County, the region (South Atlantic States) and the nation with only the State showing an increase. There is reason to believe, however, that the decline has tapered off since the last census. Therefore, the projection selected for this study is the middle one of 1,140 for 1975 and 1,018 for 1980, which still factors in the exceedingly fast decline experienced in the fifties and early sixties, but projects a decreasing rate since that time. The faster decline experienced by the South was considered still too rapid in light of Florida's opposite trend.

Mining:

It was pointed out earlier in this study that mining is not currently a major factor in the economic base of this area. Alachua County was a center for phosphate mining around the turn of the century, but the resource presumbly was substantially depleated at that time and there has been no serious mining since. There are some larger tracts of land in the western part of the county owned by phosphate companies, but it is not anticipated that large scale mining will start in the near future.

The other principal activity categorized under mining is quarrying for gravel and/or limestone to be used principally in road construction. As the county continues to urbanize, it is anticipated that there will be a continuous need for these materials. Therefore a modest but continuous growth was forecast for the total mining category.

The projected employment based on the mathematical projection of the annual growth curve was 219 for 1975 and 254 for 1980. A ratio of trend with the forecasted employment in the south resulted in an estimate of 207 for 1975. Based on the NPA national growth rate the values would be 145 in 1975 and 139 by 1980. Both NPA national projections and the Advancing South projections decline in the future. Since this is contrary to Alachua County's experience at the present, the higher projection

was chosen for the judgement model. The projections were as follows:

	1975	1980
Mathematical Projection (Judgement Forecast)	219	254
Ratio with Advancing South Projections	207	---
U.S. Rate (NPA Projection)	145	139

Manufacturing:

The total employment in manufacturing was broken down into four major categories for analysis and projection of future employment. The categories were: Lumber and Wood Products, Food and Kindred Products, Electrical Machinery, Equipment and Supplies, and All Other Manufacturing.

The combined employment of all manufacturing categories grew by 59.4 percent from 1950 to 1960, and by another 23.8 percent by 1967, or a total of 97.36 percent for the period from 1950 to 1967. The estimated total resident employment in 1967 was 3,148. This was projected to increase to 3,799 or by 20.68 percent by 1975, and to 4,272 or a total of 35.7 percent by 1980. Thus the overall rate of increase is expected to level off from approximately 4.1 percent per year experienced from 1950 to 1967 to about 2.4 percent annually from now until 1980. This, of course, is based on the sum of the various component industry groups, some of which may be expected to do better and some worse in the years ahead. A discussion of the four major groups follows.

Furniture, Lumber and Wood Products

In 1950 this category was the largest of the manufacturing industry groups. After reaching a peak employment in 1953, it started to decline sharply until about 1959. Since that time it has leveled off somewhat, although it has fluctuated greatly at times. One of the largest concerns in this industry group, Cabot Carbon Corporation, ceased operation during this period.

The largest industries remaining in the category are two wooden box or crate manufacturers, (Franklin Lumber and Basket Company of Micanopy and American Box Corporation), a wood preservative or treating corporation (Koppers) and a firm which makes cabinets, counters and other special fixtures (Wood Products, Inc.). The outlook for the latter appears good as increasing urbanization leads to more and more building and the need for its component parts, although nationally fabricated wood products appear to be declining in importance in non-residential uses. Millwork and prefabricated structures should continue to be strong however as population expands. Furniture also is a growth industry but is of no consequence in Alachua County at this time.

The wooden container industry has been affected by the increasing use of other materials, especially plastics, but seemingly have managed to hold their own for certain products, especially fruit and meat products. Employment in the wooden container industry has apparently suffered at the hands of increasing automation hence greater output per employee. Employment therefore is expected to remain at its present level or decline slightly. The other remaining major industry, Koppers, treats utility poles with a preservative as the major source of its business. The outlook for same should remain steady as population and urbanization continues; however, the impact of the increasing practice of installing utility lines underground is not yet fully known. It could have an important long range bearing on the demand for wooden poles, but it is believed that the immediate effect will not be too great.

Because of the tremendous drop in employment in the lumber and wood products industry generally in the mid-fifties, a direct projection of the annual estimated employment for the period 1950 to 1965 by regression equations (method of least squares) forecast only 32 employees by 1975 and was negative by 1980. Based on the above discussion, this would appear to be too pessimistic an outlook for the industry. Nationally the industry is predicted to increase in production and output, with only slightly less employment than now, according to the NPA projections.

It was decided to make additional estimates for the industry. The first estimate was based on the NPA index for the United States. The latter was established on a base of 1963 equal to 100. Applying the index to the estimated employment in Alachua County, 549, resulted in a forecast of 542 in 1975 and 543 in 1980. These figures indicate the level employment rate predicted Nationally for the industry as a whole, and to a lesser extent what has been experienced locally for the last several years.

A second projection was prepared based on the annual rate of decline of the State over the past ten years (1957 to 1967). This rate was approximately 1.2 percent (compound) per year. If it is assumed that the employment has leveled off in the County -- and it is interesting to note that the estimated resident employment in 1959 was 584 compared to 585 for 1967 -- and that the County will hereafter match the rate of the State, employment would be 530 in 1975 and 500 in 1980.

Finally a projection was made by the method of least squares for the period from 1957 to 1967. This projection showed employment of 487 in 1975 and 474 in 1980.

The estimates of employment in furniture, lumber and wood products in Alachua County are as follows:

	1975	1980
Projected U.S. rate (NPA)	542	543
Florida Rate (-1.2% pr. yr.)	530	500
Alachua Regression Equation 1957 to 1967 Base	487	474

Based on an analysis of all known factors, it was the consensus that the median projection of 530 for 1975 and 500 for 1980 was the most reasonable projection and was incorporated in the judgement forecast. As the local economy matures it is not unlikely for it to assume a growth rate more like that of the larger area of which it is a part. Finally, while the last estimate was based on local data, the sharp dip taken before the reclassification in 1965 may have unduly lowered the basic findings.

Food and Kindred Products

Generally speaking the food and kindred products industry would be considered a sure growth industry. It could reasonably be concluded that the more people there are the more food will be necessary to feed them. Yet the situation in this industry group is clouded by numerous unpredictable factors such as increased productivity brought about by mechanization, government support of agriculture, the effect of nature on the food supply and general world hunger.

In his thesis Cook concluded that the outlook for the industry was for little or no growth. Based on an examination of the covered employment for March, 1963, when his study was completed and the latest data available, his conclusion would appear to be correct. There were 920 employees on the former date and only 922 in 1967. The NPA's National index also predicted a very stable level of employment for the industry.

On the other hand Maddox, et al, predicted tremendous increases for the South in general in this industry, and the covered employment for Florida -- in keeping with the trends outlined earlier in the discussion of agriculture -- has experienced great increases. In fact the growth from 1950 to 1967 in Florida was over 110 percent. The latter however reflects largely the growth of the citrus industry.

Four projections were made for this industry based on the various possible growth rates. The first and highest estimate assumed Florida's annual growth rate of 4 percent (based on the period from 1956 to 1966 since previously the reporting base for industries was 8 or more employees, and the 1967 data was provisional). Starting with the 1967 employment of 758 as a base, a resident employment of 1,037 for 1975 and 1262 for 1980 is projected.

The second method was to fit an appropriate curve to the estimated annual data and project directly by the regression equation. This projection was 1,025 in 1975 and 1,160 in 1980. Another estimate was based on the annual estimated employment increase since 1960 only. The former regression relationship was based on the period from 1950 to 1967 and included greater increases in the earlier years than have been experienced recently. The results of applying the later average rate, which was approximately 1.9 percent, was an estimate of 881 by 1975 and 968 by 1980.

It was the consensus that the highest rate, which reflects Florida's growth and includes citrus which the County does not have, was not likely to be experienced here. In addition, the projection based on the total range covered by the annual estimated employment seemed unlikely, since some of the initial starts in certain industries were reflected therein, with the resulting rapid growth not likely to be repeated. Consequently, the estimate of 881 for 1975 and 968 for 1980 was deemed most likely and included in the judgment model.

Electrical Machinery, Equipment and Supplies

Some economists contend that in terms of importance to a community the service sector is more valuable than the base sector, especially as the area grows. Their line of reasoning goes that once a given service work force is established, the base employment will be attracted to it,and if it is reasonably diversified individual base firms can come and go. If such is the case then the electrical industry is the force which moved in to fill the vacuum created by losses in other base sectors, primarily lumber and wood products.

There were only three employers listed under the electrical machinery, equipment and supplies industry classification in the 1950 census. The covered employment lists none prior to 1955. From then until today employment has risen to first among the manufacturing industries of the economy.

Two major companies dominate the industry - General Electric at Hague and Sperry Tube Division at Gainesville. Both were asked directly what their future employment would be. Both replied that to try to estimate 1980 employment would be impossible. As one official pointed out a new product line which meets with widespread acceptance could cause employment to jump to unpredictable levels. As an example, one official at GE pointed out that the plant originally scheduled for this area, but located somewhere else, now employs 3500 people. While exact figures could not be estimated by the companies for both periods used in this forecast, their comments were helpful in evaluating the reasonableness of the projections made in this study.

From about 1950 this industry has been the fastest growing manufacturing employer in the Nation just as it has been in Alachua County. Most projections for the industry generally are for this trend to continue as advancements made in space and defense technology find applications in civilian lines, plus the demand created for more goods from an increasingly affluent populace. How this will specifically affect the local area is impossible to determine. At present, neither of the two major plants foresee any large expansion beyond normal growth but this does not rule out the possibility of a large surge.

Florida as a whole has experienced a tremendous increase in the so called "light industry" typified by the electronics industry. Electrical machinery, equipment and supplies alone grew from 3,015 employees in 1957 to a phenominal 25,100 in 1967. The climate and comfortable living environment are attributes most frequently cited for this growth. One official stated that this County offers a very attractive location

for light, clean, assembly type operations. He cited a reasonable pool of good unskilled labor as a factor in addition to the other natural amenities.

It is not unreasonable to expect that within the forecast period, particularly by 1980, a fairly substantial increase in employment can occur in this type of industry. It might well be that it will not be in electrical machinery per se but some related or similar industry. Thus the projections chosen for the judgement model takes into consideration this potential to the extent that the higher of two possible projections was selected. Of course, this overall potential is also reflected to some extent in the following industry group - "other" manufacturing. Together these two classifications are expected to experience most of the new potential growth in manufacturing.

Two projections were made for this industry group. The first is based on the assumption that growth locally will occur at the predicted rate for the industry as a whole, that is, the national rate of about 2.44 percent a year. The result of this projection is a forecast of 1,072 for 1975 and 1,209 for 1980.

The second projection is based on the past employment trend in the industry in the County. It is based on projecting, by the method of least squares, the employment data for the period from 1955 to 1967. Since this covers the period when the two major industries were growing from initiation to full production the curve was necessarily quite steep and the projections seemingly fairly high. They are 1,266 for 1975 and 1,565 for 1980. Nevertheless for the reasons outlined above, they were chosen in the judgement model.

Other Manufacturing

This category was included to cover all those employees not reported under the three major headings previously discussed. As a catchall category made up of many small and unrelated industries it is by far the most difficult to analyze or project.

Some of the larger employment industries in this group were discussed earlier under the section examining the current economic base. These included chemicals which was one of the largest in 1960 but is much less significant now. Tung Oil Products would likely be the largest remaining firm in this category. Another large employer with an estimated 200 plus workers in 1960 was printing, publishing and allied industries. The Gainesville Sun and Storter Printing are the two largest firms in this category. Together it is estimated that they employ something less than 200 workers today. Another significant employer is Ring Manufacturing which was discussed earlier. Carlon Products Corporation of High Springs, which makes plastic pipe is estimated to have about 50 employees. Other miscellaneous firms with a number of employees are Ferber Sheet Metal, Maddox Foundry and Machine Works of Archer, Condor Precision Corporation, American Gage and Machine Company, Atkins Technical, Denny Concrete and Edwards Building.

Because of the diversity in this category it is impossible to separate out and individually evaluate its parts. Furthermore, because the County's manufacturing industry is unique and unlike any other larger area by its distribution of employment, it was not plausable to project on the basis of what is expected to happen in larger regions or State of which it is a part. This leaves the mechanical projection based on the past employment as the only reasonable alternative.

Two such projections were made. The first is a direct projection by regression equation -- fitting the best curve to the annual employment data by the method of least squares. The result of this operation was a forecast of 1,122 by 1975 and 1,239 by 1980.

The second method was to apply the same methodology to the total manufacturing industry and assume that the prevailing percentage relationship of the "other" category to the total which existed in the past would hold true in the future. In 1950 approximately 28.09 percent of the total resident employment would have fallen into the other category. In 1960 the percentage was 30.90 and in 1967 it was estimated to be 29 percent. Therefore on the basis of an average of 29 percent of the total manufacturing employment, a projection of "other" employment of 1,033 and 1,141 for the two years was found.

The figures derived by directly projecting the past experience in the "other" manufacturing category were selected for inclusion in the judgment forecast. These figures are 1,122 for 1975 and 1,239 for 1980.

Summary of Manufacturing Industry Group Employment Projections

The judgment model forecasts of employment for all manufacturing are as follows:

	1975	1980
Food and Kindred Products	881	968
Lumber and Wood Products	530	500
Electrical Equipment, Machinery & Supplies	1266	1565
Other	1122	1239
Total Manufacturing	3799	4272

This total would represent an increase of 651 by 1975 or 20.7 percent over the estimated resident employment in 1967, and a 35.7 percent increase by 1980. Compared with the 59 percent experienced from 1950 to 1960 alone, this does not

seem to be an unwarranted speculation. Nor does it appear particularly conservative based on the fact that some of the larger industries are maturing now compared with their initial starts in the County.

Transportation, Communications and Public Utilities

As the earlier discussion under the section on recent trends indicated, totals in this general category are deceptive. While they showed a modest increase from 1950 to 1960, the overall employment was virtually unchanged over the period from 1960 to 1967. The analysis of this category shows, however, that only one major industry, railroad and railway express, actually experienced a decline in this period and the other showed increases. Because of this, the overall category was separated into several industry groups for projection.

Railroads and Railway Express

Generally speaking, transportation has shown a considerable decline in employment in this country and in the state as people have switched from common carriers to private transportation. Both freight and passenger traffic has declined. Rail transportation especially has suffered as passengers switched from mass transit facilities to private automobiles and much freight was transferred to trucks and air freight.

Railroad employment in Alachua County was presumed to have followed this trend, based on a drop in the census figures and the decline in the number of trains serving the area. Because railroad employees are not covered by employment compensation a ratio of trend extrapolation of annual employment could not be made with an actual local data series. Consequently an estimate was made based on state employment to provide a basis for projection. As a result the estimate for 1966 was 143, down from 234, in the adjusted 1960 census. This appeared to be very consistent with a rough estimate of 135 for 1968 by an official of the railroad.

A projection of this annual data curve by regression equation resulted in a negative number by 1975. It is believed that this will not be the case, however as the railroads generally have endeavored in the past few years to improve their competetive position, with some notable success. The two lines serving Alachua County have merged, and while it is entirely possible there could be some further decline in local service, it is not unreasonable to assume that at least some employment will be necessary to service the trains passing through the county. The actual rate of decline for the state in railroad transportation from 1950 to 1966 was about 2.24 percent per year (compounded) or about 30 percent overall, while the county dropped 64 percent.

For the judgment forecast it was assumed that the decline locally has slowed to the point that in the future it will match the annual decline rate of the state. At this rate employment would be 126 in 1975 and 112 in 1980.

Trucking Service

Annual estimated resident employment in the trucking industry was also based on a state data series as the reporting of this category by unemployment compensation did not start until after 1960. The state showed a tremendous increase of some 208 percent in the period from 1950 to 1966. The growth since 1960 has been at a more modest, but still healthy rate, with an increase by 1966 of 30 percent.

Trucking service employment also increased in the County from 1950 to 1960 but at a rate slower than that experienced by the State. The total increase was actually about 112 percent. Therefore, the estimated annual County employment based on the State data series could be on the high side. The covered establishment data has remained almost unchanged since it was first reported in 1962.

The prospects for the future are believed to be reasonably good, though not as spectacular as many believe. Since Gainesville is centrally located in the state, several people have expressed the view that the city could become a trucking center. It suffers however, from the fact that it lies only 2-3 hours distance by freeway from the much larger regional urban complexes of Tampa - St. Petersburg, Orlando and Jacksonville, and will have a less desirable geographic position than Lake City which lies near the intersection of Interstate 75 and Interstate 10.

Despite these facts, however, the projection based on the annual employment curve does not appear unreasonable in that the number, in terms of the total employment, is small and the total expected growth of population will create a larger demand for trucking services. Therefore, the projections of 205 for 1975 and 233 for 1980 were included in the judgment model.

Other Transportation

Other transportation includes such industries as local and non-local bus systems, taxi services, pipe lines systems, local ambulance services, and local air service. Generally many of these systems such as the taxi and ambulance services are directly related to total population and should have a reasonably steady upward growth. Others, such as local mass transit and airline service are less easily predicted. If local initiative is rewarded both of the latter would show improvement. The Gainesville urban area has recently been included on the route of several smaller "feeder" airlines and local government officials have continually attempted to secure more regular passenger service. In the mass transit area a new bus system was recently initiated but has consistently lost money since its inception. Future success will depend on the appeal of transit systems and future growth patterns, especially population density. Smaller air services such as charter and small craft maintenance should also continue upward.

In terms of numbers the "other" transportation category is also relatively insignificant. There were only 157 resident employees in 1950 and 187 in 1960. Because the annual estimated employment curve showed a small decline by 1966, the projection of this curve reflected a continuation of this decline with the result that only 110 employees were left by 1975 and 55 by 1980. Because this seemed unduly pessimistic, a second projection was prepared based on the 1950-1960 growth rate of 1.8 percent compounded annually. Assuming such rate will remain constant, and starting from the base estimate of 184 in 1966, the projections were 216 in 1975 and 236 in 1980. This figure was used in the judgment model.

Communications

The communications industry includes primarily telephone, telegraph & radio and television broadcasting. By far the largest percentage of this employment is in the telephone industry, which was also the fastest growing of the transportation, communications and utilities classification during the past 15 years. Unquestionably, the rate of growth in the telephone industry by other indices than employment would show an even more dramatic increase since automation has been very prevalent in recent years. The growth of the establishment employment as reported under unemployment compensation laws was 32.4 percent from 1962-1967 alone.

Prospects for the future are believed to be a continuation of this growth pattern, with a somewhat diminished rate due to increased productivety from automation. There is reportedly a reasonably good chance that this area will get its own television station in the very near future which would add to this employment.

A projection of the annual employment curve for the years 1975 and 1980 resulted in totals of 645 and 733 respectively for these dates. A survey of the different divisions of the telephone company revealed that this was fewer employees than was roughly estimated by them to be needed. Since their estimate was for establishment and not resident employment, a ratio between this estimate for 1975 and the 1967 estimated resident and 1967 covered telephone workers was made. The result was a estimate of 801 employees by 1975 for all communications. Finally, the growth rate in communications over the past ten years for the state was calculated on the basis of covered employment. This rate was determined to be about 5.76 percent which, if applied to the 1967 county estimated employment, would result in projections of 796 for 1975 and 1,052 for 1980. This is close to the rough estimate based on telephone company estimates.

Most national projections for the industry are much more conservative, based on the prediction of increasing automation which was so prevalent in the past. The NPA index reported in the Columbus, Ohio Study showed lesser employment in 1975 and 1980 than in the past. Based on this index, the employment would be 439 and 420 for 1975 and 1980 respectively.

It was the consensus of this study that the last estimate is undoubtedly too low based on the local trends, while the projection based on the past growth rate of the state appeared too high considering the advances made in the use of computers and other productivity increasing devices. Therefore the original projection of the estimated annual employment was chosen for the judgment model. In summary, however, the high median and low estimates were as follows:

	1975	1980
High (State Rate '57-'67)	796	1052
Median (Judgment Choice)	645	733
Low (NPA National Rate)	439	420

Utilities

Employment under the heading of utilities is misleading in that the largest single utilities system in the county - the Gainesville municipal system -- is publically owned and its employees counted under government workers or some other category. Those that remain in this classification are primarily private electric, gas and some private sanitary sewer system employees. While these have shown a substantial continuous, upward numerical growth -- the increase from 1950 to 1960 being 75 percent -- this number is not great in terms of the total resident employment force.

The future employment in utilities, in a larger general sense, can only increase in response to population growth. It is impossible to determine how much of the utility service will rest in private hands and how much will be under government auspices. The Gainesville system has shown great interest in providing for the future needs of the urban area, which is where most of the growth can be expected to occur. Regardless of what happens with the public utilities it is reasonable to expect some continued expansion in employment in the private sector if for no other reason than the fact that the public facilities do not include all utilities,such as gas for example.

The projected curve based on the estimated annual data shows an increase to 285 by 1975 after which it peaks and declines to 271 by 1980. Based on past growth performance, which was between 5 and 6 percent annually from 1950 to 1960, this would appear to be very conservative. However if projected at this past rate, which resulted in an increase of almost 82 percent in the period from 1950 to 1965, the net result would be 490 by 1980, which judgment would dictate to be high in light of other local factors. Based on the projected national rate the employment would grow to 289 and 292 for 1975 and 1980 respectively. This figure is only 21 persons greater (in 1980) than the equation projection and therefore it was decided to include the original estimate of 285 and 271 in the judgment model. The latter is based on data more closely reflecting the local situation. When coupled with the knowledge that

the covered employment in SIC 49, which basically makes up this classification, was only 23 in 1967, and in terms of the percentage which this group is of the total employment, it is clearly within the tolerance of this study.

Summary of Employment in Transportation, Communication and Utilities

Based on the above discussion and projections the judgment model forecasts of future employment in transportation, communication and utilities are as follows:

Industry Group	1975	1980
Railroads & railway Express	126	112
Trucking and Warehousing	205	233
Other Transportation	216	236
Communication	645	733
Utilities	285	271
	1477	1585

It is interesting to note that the increase from 1960 to 1975 for the above total represents a rate of slightly less than 1.3 percent compounded annually. The past rate of the firmest data available -- between the two adjusted census figures was about 2.1 percent. However, a straight projection of the total curve of the estimated annual employment by least squares resulted in a total estimate of 1,352 for 1975 and 1,418 for 1980 -- reasonably close to the sum of the projections of the component parts.

Retail Trade

As the earlier discussion pointed out and Chart XI indicates, retail trade as a whole has displayed a remarkably steady upward growth pattern. The rate of growth, based on the estimated resident employment from 1950 to 1967, was about 4.2 percent annually. This is believed to be about twice the rate for the nation. The total estimated increase in employment from 1950 to 1967 is estimated to be almost exactly 100 percent. The growth since 1960 is estimated at 35.6 percent.

Retail trade was broken down into only three industry groups for analyses because only three were included in the census. These are food and dairy products and eating and drinking places, with all remaining retail included in an "other" category.

Eating and Drinking Places

Growth in this category has outstripped the total retail category as a whole. This was due mainly to a recent significant surge in the construction of eating establishments, particularly those of the short order type catering to college students. While there have been some other minor irregularities, growth generally has been rather steady. Thus it lends itself well to direct projection by straight line or by the method of least

squares. Needless to say, however, this and all retail categories are dependent on the population of a given area, and will reflect growth or decline in a rather direct relationship -- given some latitude for changes in income. Therefore, a more accurate estimate of employment should be made from knowledge of future population size and income. However, since one of the purposes of this study is to determine the future population levels, such an estimate cannot be made at this point.

Based on the estimated resident employment in 1950 and 1967, the increase for eating and drinking places is estimated at about 5.57 percent per year. Growth in the last ten years as based on covered employment was at an even greater pace, as the graph on covered employment (Chart XII) indicates. It is not expected that this upswing will continue indefinitely and the pace will likely settle back to normal. If a period is chosen prior to the upswing in 1966 and 1967 to determine the annual rate of growth (since 1950) a slightly lower figure of 4.6 percent annually is found. This however, is still a high rate compared to most areas but is very near the rate for Florida, with its large tourist industry.

Two projections were made of this industry. One was based on a projection of the estimated annual resident employment. This projection indicated employment would be 1,863 in 1975 and 2,413 by 1980. A second projection based on a growth rate of 4.6 percent produced the higher figure of 2,232 for 1975 and 2,794 for 1980. The former was believed more likely and was included in the judgment forecast.

Food and Dairy Products

The increase in employment in this industry group is very similar in many respects to employment in the rest of the retail trade. It has had a very steady upward growth reflective of the general rise in population and income. The rate of growth for the period from 1950 to 1967 was approximately 5.77 percent per year, based on the estimated resident employment. Since this would appear to be a very high growth rate, all possible sources of employment data were checked to establish the validity of these figures, and all showed the same basic trend. For example, the County Business Patterns showed employment more than doubling from 1959 to 1967, and the covered employment went from 556 to 1,149, or more than double, in the period from 1960 to 1967. These figures, as in all retail employment, reflect the rapid growth in population and income over the past few years.

Three projections of future employment in the retail food industry were made; one based on the actual annual percentage increase experienced over the past 17 years, a second based on a direct projection of the estimated annual employment based on the method of least squares (regression equation), and a third based on the assumption that the rate will drop to lower average of no more than 4.5 percent as the economy matures. The second projection, derived by fitting the best curve to the estimated annual employment, was the lowest of the three. It was 1,493 for 1975 and 1,780 for 1980. The

two other projections were:

	1975	1980
At the past rate of 5.7 %/yr.	2139	2831
At a reduced rate of 4.5 %/yr.	1942	2419

The estimated resident employment in this category was consistently higher than other sources of information or employment in the retail food industry. For example, in 1966 the covered figure was 574, the County Business Patterns reported 846 while the estimate by ratio of trend was 1,366. This was to be expected since much of the food retailing is done by smaller firms which normally would not be covered by unemployment compensation, etc. The fact that the same relationship existed at the time of the last census lends some confidence to the figures also. Nevertheless, the persistently lower employment figures from such other sources, the feeling that the tremendous rate of growth in the past cannot be sustained forever, plus the fact that the regression equation is directly related to the historical data for this county all lead to the acceptance of the most conservative of the three projections for the judgment model. These figures were 1,493 in 1975 and 1,780 in 1980.

Other Retail

All retail trade except the two categories discussed previously were placed in the single category of other retail trade. Included in the group are auto dealers and service stations, building materials, hardware and farm equipment, apparel and accessories, furniture and home furnishings, and many other types of general merchandise.

Growth in the various categories making up the group is shown to a certain extent by Chart XII (which shows covered, not resident, employment). Altogether the growth in retail has been steadily upward, with a very significant increase in the last few years, except for 1967 which tailed off somewhat. This rate of growth averages approximately 4.2 percent per year for the total period from 1950 to 1967.

Future growth, like in the other two retail categories discussed, will depend on population and income growth. While Gainesville and the County serves somewhat as a retail trade center for a larger region, the largest share of sales comes from County residents.

Three projections of future employment in the "other retail" category were prepared. The first was based on the NPA projections of national growth in retail and wholesale combined. When applied to the hard census data for 1960, the total for the combined category was only 6,325 for 1975. This is lower than the total estimated for 1965. When the rate is applied to the 1965 estimate, a projection of 7,735 is derived. Therefore, assuming that "other" retail accounted for the same 56.37 percent of the

total retail and wholesale combined as it did in 1960, projections based on the national expected growth resulted in projections of 4,360 and 4,721 for 1975 and 1980 respectively. If the rate were applied to the 1960 data, the projection would have been 3,565 and 3,860 respectively.

Another projection was prepared by the principal method utilized in this study, namely, finding the best regression equation with previously prepared estimates of annual employment and projecting to the target years. The results were 4,450 for 1975 and 5,082 for 1980.

The final and highest projection resulted when the annual rate of growth over the past 17 years was extended to the target years. This rate was 4.2 percent annually and the projections were 5,111 by 1975 and 6,279 by 1980.

In summary the projections were:

Projection	1975	1980
NPA National rate, applied to 1965 base yr.	4360	4721
Regression Equation fitted to Annual Employment	4450	5082
Previous annual growth rate (4.2 %)	5111	6279

While Florida as a whole has experienced an extremely high growth rate in retail trade due in large part to the tourist trade, the rate for Alachua County in this period would certainly appear to be too high to be sustained over another long period. On the other hand, the NPA projected national rate is unquestionably low in comparison to past growth. Consequently, the medium projections of 4,450 and 5,082 was selected for the judgment model.

Summary, Retail Trade Equipment

The totals chosen for the judgment model of employment were as follows:

Category	1975	1980
Food and Dairy Products	1493	1780
Eating and Drinking Places	1863	2413
Other Retail	4450	5082
Total Retail Trade	7806	9275

These figures represent a total increase of 31.5 percent from 1967 to 1975 and 56.3 from 1967 to 1980. By way of comparison the latter is for a 13 year period, while in the 17 years from 1950 to 1967 total retail grew by an estimated 100 percent. The rate for 1960-1967 was approximately 4.2 percent (compounded) per year, while the projected rate for all retail would average about 3.5 percent over the next 13 years.

Wholesale Trade

The strength of wholesale trade in a particular area is sometimes gauged by comparing it with retail trade in the same area. It is assumed that wholesale is very strong when its sales exceed those in retail, for presumably it is then servicing the needs of that retail and most likely those of a much larger area. By this yardstick Alachua County does not rate very well for retail has a large edge in sales, about $100 million to $49.9 million in the last Census of Business, and has enjoyed a faster growth rate, at least in employment.

According the Rand McNally (36) and most other studies of regional centers, Alachua County lies within the Jacksonville regional area of economic influence. While continued growth and increased size will eventually lessen the dependence and influence of Jacksonville on this area, it is not believed that independence in wholesale trade is very near. This is not to say that the County cannot continue to experience a reasonable, even accelerated growth in this area.

It is very difficult to establish a growth rate for this industry. Projections of employment by mechanical means based on the previous growth patterns were greatly complicated by a classification error in the covered employment which formed the base for annual estimates. This difficulty can be seen by examining Chart XIII. If all the data through 1967, including 1965, were used in a mechanical projection, the results would be inflated by the large number shown for 1965. Therefore, the estimate was based on data through 1964 only. This, however, may not give adequate consideration to a slight drop in employment experienced after the reclassification between 1966 and 1967.

The projections for wholesale trade were 1,123 employees for 1975 and 1,273 by 1980. As in other industries these estimates were compared against various possible growth rates. The annual rate of growth between 1950 and 1967 based on estimated resident employment, is about 4.5 percent. This is quite high compared to the national growth rate, although quite similar to the Florida rate over the past ten or so years. Again, however, as the earlier discussion of current growth disclosed, a rate based on the covered employment from 1956 to 1967 resulted in a much lower figure of 2.7 percent per year. It is difficult to assess the reasons for such variance except to note that the 1967 covered employment showed a considerable drop, which may indicate only a trough year and not a real decline.

In any event, if the latter is assumed to represent a bottom limit and the former a high, estimates for wholesale trade employment in 1975 would range from 1,038 to 1,179, and for 1980 from 1,186 to 1,466. The three projections thus prepared are:

	1975	1980
Low (at 2.7 % - year)	1038	1186
Medium (least squares)	1123	1273
High (at 4.5 % - year)	1179	1466

It was the consensus that in the absence of compelling evidence to the contrary that the medium estimate prepared by the primary methodology of the study was most reasonable and acceptable. Therefore, 1,123 and 1,273 were included in the judgment model for 1975 and 1980 respectively.

Finance, Insurance and Real Estate

One of the fastest growing industry groups in the County has been finance, insurance and real estate. Employment grew by 120 percent from 1950 to 1960 and is estimated to have increased another 59.3 percent since 1960, or by a phenominal 251 percent from 1950 to 1967. There are many factors to which this rapid growth can be at least partially attributed, but fundamentally it reflects both the growth of the population to which it is a service industry, and perhaps more importantly it reflects the fairly high income of many of the residents who demand such services. Growth in real estate also reflects the nature of the major employer - the University of Florida -- which has a consistent turnover in personnel.

The essential question in this study is whether or not this high growth rate can be sustained over the next ten to fifteen years. Examination of the annual employment data (Chart XIV) shows, that with the exception of a slight flat period just after 1957 and another in the early sixties, the upward trend has been very consistent; even the slumps were followed by sharp upturns such that the overall trend has been maintained.

The National Planning Association foresees a continued high growth rate for this industry. Based on their projected rate as applied to the county's 1965 base data, the growth in employment would be 1,797 by 1975 and 2,036 by 1980. Past performance indicated that the increasing employment was on a curve or accelerating rate rather than in straight linear pattern which was taken into account in projecting the annual estimated employment. The results were projections of 2,641, and 3,402 by 1975 and 1980, respectively. The former figures represent a pace considerably less than has been experienced in the county in the past, while the latter represents a high level of growth, which although sustained heretofore for a long period, may not

be realistic for the future. It was concluded that these two estimates represent a reasonable high and low projections, but a middle group projection was desired for the judgment model.

It was concluded that the rate of growth would continue upward at basically the past overall rate, but not at an increasing rate. Therefore, a second regression equation which had the effect of leveling off the growth rate was fitted to the date and the following projections made: 1,971 by 1975 and 2,322 by 1980. These projections were then included in the judgment model.

In summary the projections were:

	1975	1980
High	2641	3402
Medium (Judgment Model)	1971	2322
Low	1797	2036

It should be remembered that potentially any of these estimates are feasible and the medium figure represents only a judgment estimate based on the analysis of this study. A higher employment very well could be achieved based strictly on past performance. Another comparison by ratio of trend made with The Advancing South projection would have resulted in a figure of 2,311 for 1975 which is also higher than the forecast chosen.

All Services, Excluding Education and Private Household Workers

It was pointed out in the previous discussion that reliable annual data for all the separate industry groups under the broad heading of services could not be found. Subsequently, an estimate of annual employment for all services except education and private household workers was constructed. Actually two estimates of annual employment were prepared (See Chart XVI) one based on a ratio of trend between the 1950 and 1960 census data and the covered employment in services, and the second and lower estimates assuming a constant ratio between the 1960 Census and the covered employment.

These two curves provide the base for forecasting employment in services for 1975 and 1980. Three forecasts were prepared. The first involved fitting a curve by logistic extension to the annual estimate (the higher estimate) which expressed the ever increasing rate of growth displayed in this industry groups, especially over the past ten years or so. The result of this exercise was a projection of 12,300 for 1975 and 15,200 for 1980. Were the immediate past growth rate in service employment to continue, these amounts would be reached by the mentioned dates.

This would seem unlikely unless there were to be a similar increasing growth rate in the basic employment sector of the economy. Therefore, two other projections

were prepared, one based on each of the two separate estimates of annual employment. The method used was to fit a linear equation (method of least squares) to each set of data, which had the effect of dampening the increasing growth rates displayed by both. The results for all three were as follows:

	1975	1980
Projection of Annual Data 1960 Ratio	7,226	8,948
Projection of Annual Data, Ratio of Trend 1950/1960	8,992	10,516
Logestic Extension	12,300	15,200

After weighing all available information regarding the possible future size of the services industry and all its component parts, it was concluded that the medium projection of 8,992 and 10,516 employees was the number most likely to be reached by 1975 and 1980, respectively. Also considered in this judgment was the fact that this projection was derived by the methodology most consistent with the study design.

Private Household Workers

Because of the total lack of data against which to check results, it is extremely difficult to estimate the current employment in private households, and it is doubly difficult to forecast same for some period in the future. The estimate shown in Table I and in Chart XVII represent judgment considerations which have a weak foundation. The data shown as the most probably curve actually consists of two different estimates, one using a ratio of trend with national data from 1950 to 1960, and another from 1960 to 1967 based on single relationships or ratio between local and national data in 1960 projected forward based on the national data. The lower curve from 1960 - 1967 was selected as most likely at that stage because of intuition judgment by several persons familiar with employment trends. These judgments could well be incorrect.

In examining the hard data available -- the two adjusted census figures -- it was found that employment showed a considerable upward growth trend in the period from 1957 to 1960. The rate was about 4.6 percent per year, which is higher than many other industry groups. The national trend since 1960, however, has been very definitely downward, after the actual peak was reached in 1962. The rate of decline from 1960 to 1967 was about 2 percent. The lower curve down on Chart XVII closely mirrors this decline since it was formed on the basis of the national experience.

Three projections were prepared for consideration. The first involved fitting a curve to the highest curve shown on the annual employment chart and projecting this by an appropriate regression equation. This resulted in the highest forecast: 1,925 for 1975 and 1,616 for 1980. Note that these figures are actually higher than the second estimate for employment in 1967.

The second and third projections consist of extending the 1960 - 1967 annual estimates forward; first by the method of least squares which resulted in figures of 1,334 and 1,059 for 1975 and 1980, respectively; second by assuming a continued net decrease of 2 percent per year which yielded estimates of 1,346 for 1975 and 1,233 for 1980.

The highest of these projections, 1,925 for 1975 and 1,616 for 1980, was selected for the judgment model. While this is contrary to the earlier judgment made on the annual estimates, it is based primarily on two considerations. First, despite the apparant decline nationally in this type of employment, there remains in Gainesville a strong need for this type of worker, particularly by University personnel. Secondly, the history of employment for 1950 to 1960 is so strongly upward that it is believed that a complete reversal would not or could not occur as rapidly as the lower estimates would indicate. Finally, it was derived by the methodology most consistent with the original study design.

Education

Even though the industry group education contained 22.55 percent of all resident employment in 1960, this statistic alone belies the actual importance of the educational institutions, particularly the University of Florida, to the economy of the County. On the one hand the University's influence is directly responsible for the generation and growth of many service industries. Secondly, some of the University's actual employment is not included under education and in the 23 percent figure. This stems from the fact that the last census classifications by industry group formed the basis for breakdown in this study, and it is believed that many education and government employees were classified under their private enterprise counterparts. For example, non-teaching employees at the University hospital were undoubtably classified under the industry group hospitals.

There are three educational institutions whose employment is reflected in this industry group classification. These are the University of Florida, Santa Fe Junior College (which did not exist in 1960) and local school board employment. Estimating current resident employment, not to mention forecasting future employment, is made very difficult by the fact that the census does not distinguish employment in the institution of higher education from the local schools.

Because of this fact the established methodology of this study was not followed in forecasting employment in this classification. While an estimate of annual employment was prepared by combining estimated local school and university employment and comparing them with the 1960 adjusted census figure, the use of such estimate was limited to the fullfillment of Table 1 and for providing base estimate for 1967. Two reasons were paramount in the decision not to project this established curve to the forecast dates. First there was the admonition by Hamilton-Thomas that the few major employees should be examined closely for actual plans rather than attempts to estimate same. Since the University is the County's largest employer, it was decided to attempt to get hard forecasts for that institution to be plugged directly into the judgment model.

Interviews and data provided by other major employers were used as guidelines in determining which mechanically constructed estimate would be used in the judgment model but not directly as in this instance. Finally, the second major reason was that employment in the local school system is entirely dependent on the total population and the age group characteristics of that population. Therefore, direct forecasts based on same were necessary in this instance.

The first necessary step in independently projecting lower and higher level education employees was to determine the relationship of reported resident employment of the last census and the other employment data to be used as a base for projecting future employment.

A division of the adjusted employment in education was made on the basis of the proportional relationship of those who listed their occupations as a teacher (at the lower level) to the known teacher positions in 1960, to the estimated total employment of the school board. The result was that 788 of the total 6,150 employees in education were classified as school board employees and the rest assumed to be from the University. The remaining 5,362 is still far less than the estimated number of employees at the University for this date. For example, the Comptroller's office provided a figure of 6,836 for 1960 employment at the University. Presumably, the difference can be attributed to the classification differences mentioned above, plus the fact that the latter probably represents authorized positions for the fiscal year, as opposed to a count of actual residents of the county working for the University. In addition, a considerable number of people working for the University do not reside in the county, and some, such as the agriculture extension employees, do not work in the County. At this point it should also be mentioned that a great deal of the commuters from outside the County, particularly secretarial and other office workers, are believed to be employed by the University.

Once this division of resident employment was established it was used for all other projections since no other firm relationship could be found. The ratio of the estimated resident employment from the census to the employee data from the comptrollers office for 1960 was 1 to 1.27, or expressed in reverse 0.7644 to 1. Therefore it was assumed that of each 100 university employees 76.44 would be resident employees by census definition. It is believed that this is a reasonable assumption so long as the University does not make a major change in its basic structure such as would be the case if a branch were opened in Jacksonville. Even in that event the projections are not likely to be disturbed unless such a branch detracted from the 25,000 enrollment ceiling which provides the base for the projections herein.

It is upon this ceiling, which was established by official action of the Florida State Board of Regents, that the accuracy of the education projections and to a large extent the total employment projections of this study will rest. If the ceiling was raised the results are not likely to be too significant to the 1975 forecast. The 25,000 enrollment will not be reached until 1973, according to estimates by University

officials. In addition, the student mix i.e., (the ratio between lower (freshman and sophomores), upper (juniors, seniors and five year degree students) and graduate students, will not be reached by 1975. This mix, which will ultimately be 25:50:25, will add to the employment since the present mix contains a smaller than desired number of graduate students, who have a higher ratio of faculty to students. Finally, expansion of the medical center such as the opening of a dental school will have an effect far greater in terms of employment than in the number of students enrolled in that college. Based on the established policy of the Board of Regents including the enrollment ceiling, the University provided the following estimates of faculty and academic staff:

Year	Full Time	Part Time	Full Time Equivalent (of Part Time Personnel)
1969-70	2604	150	52
1975-76	3247	186	62
1980-81	3539	195	65

The forecasts were translated into projections of total employment based on the average ratio between the academic and non-academic employees over the past few years. The latter were determined by the reported October payrolls for the years 1961-68. This ratio has gradually increased from just under 30:70 in 1961 to slightly less than 25:75 in 1968. It appears to have stabilized around this latter figure and for the purposes of this study it was assumed that it would remain at this level during the forecast period.

The total employment was then reduced to estimated resident employment by the percentage existing in 1960. The result was an estimate of 10,771 employees by 1975 and 11,716 by 1980. This represents an increase of almost exactly 100 percent over the estimated 1960 resident employment, and slightly less than 120 percent for the period from 1960 to 1980.

Officials of Santa Fe Junior College were also requested to estimate their employee levels for 1975 and 1980. The number of full time faculty and staff was estimated to be 270 by 1975 and 330 by 1980, with a ratio of two (2) faculty for each staff member. This does not include part time personnel who might be counted by census definitions. In accordance with present experience, it was estimated that there would be about one (1) part time employee for each three and one half (3 1/2) full time employees. For the purposes of this study it was assumed that not all part time employees would qualify as resident employees and the ratio was lowered to 1:3, thus adding 90 and 110 to the 1975 and 1980 estimates, respectively.

The final major employee group to be forecast is that of the local school board. To arrive at same, the following methodology was applied:

- The population of the county for 1975 and 1980 was estimated based on an appropriate ratio between resident employment and total population. In this estimate no increase over the 1967 school board resident employment was included, while increases for all other categories were factored into the total.
- The estimated present population was deducted from the forecasted population, and the number of students expected from the increase was found.
- This expected increase in students was then translated into employment.
- The additional employment thus found was also translated into total population, the number of expected students from same determined and a final adjustment made to the employment count. This was then converted to resident employment by the same ratio as existed in 1960.
- The total local resident education employment, consisting of the 1967 employment plus the increase thus determined, was then added to the University of Florida and Santa Fe Junior College forecasts, then was included in the judgment model of employment.

The total estimated resident employment in local education was estimated to be 1,555 in 1975 and 1,977 in 1980. This compares with the 788 estimated for 1960 and represents an increase of 97 and 151 percent over the 1960 level. The total education employment for all levels by 1975 was estimated to be 12,686 and 14,133 for 1980.

Public Administration

The past annual employment in public administration as estimated and shown in Chart XVIII shows a remarkably consistent and steady upward growth. No doubt this is due in large part to the fact that annual State employment in government was used as the base for this ratio projection, as local data for the total period covered was not available. As the earlier discussion noted, however, it was concluded that the results of such projection appeared to be quite reasonable, even though some of the actual fluctuations may have been dampened somewhat. It should also be remembered that the category of public administration is that followed by the census, and is not the same as government in general. There were in fact a great number of employees actually working for government institutions, particularly in education, who were not included therein.

In keeping with the basic methodology of this study a first projection of the 1975 and 1980 employment in this category was prepared by establishing the best regression relationship with the annual estimates of employment. In this particular case this

was a simple equation determined by the method of least squares, which nearly approximates a straight line projection of the annual data. The results of this approximation were 2,198 in 1975 and 2,705 in 1980.

A second estimate of future employment was based on the premise that the growth rate of the fifties, which appeared to have continued into the sixties, would also continue until 1980. This rate was about 5.53 percent annually. If applied to and projected forward from the estimated 1967 count of 1,557, the total employment would be 2,394 by 1975 and 3,133 by 1980. This is about 200 people more for 1975 by this estimate than the previous one. Principally, this is due to the fact that the rate was determined from only two figures, the two census dates, whereas the least squares methodology takes into account the slower growth in the early fifties before the consistent upward trend began.

If the estimates of total employment in all government published by the Florida Industrial Commission are assumed to be representative of local public administration employee growth, the annual rate is now actually closer to six percent. At a rate of 5.9 percent,growth would reach 2,478 by 1975 and 3,301 by 1980.

Growth in employment in public administration is generally assumed to be very directly related to overall population growth. Thus it very well could be that all of the above estimates are somewhat optimistic if the future growth in the other employment categories do not occur as projected. In any event the lowest of the three estimates, which actually represents a small decrease in the rate of past growth, was chosen for the judgment model. This estimate was for 2,198 by 1975 and 2,705 by 1980.

Construction

In the past, employment in the industry group, construction, has shown perhaps the most erratic growth pattern of all categories studied, thus making projections for the future very difficult. As was pointed out earlier, many outside forces influence growth or decline in this industry. A single large project can greatly inflate data for any one year, thus distorting purely mechanical forecasts. Table XII and Chart XX indicate how widely the fluctuations can be in the construction field.

A great deal of the difficulty in forecasting is caused by the uncertain nature of construction at the University, which generally accounts for a large percentage of the total activity in the county. Even with accurate projections of the amount of construction planned, a solid projection is difficult to derive since the actual appropriation must come from the state legislature, which does not always allocate money for projects as planned by the University. As an example, it has been said that a recent request for $50 million for capital construction was cut to an actual appropriation of about $2 million. The overall future policy of the university system for the State as a whole, which was discussed in the section on education, will determine to a large extent growth in construction in this area.

Two factors give rise to speculation that growth will at least continue upward, although the rate is more difficult to determine. There is first of all the construction of local schools mentioned earlier, and there is the planned expansion of the University medical center. Again, however, it should be kept in mind that growth of the latter is subject to decisions not yet made or money not yet appropriated by State authorities. Finally, it should be kept in mind that the public construction is only a part of the total construction industry. Generally speaking, so long as the population grows there will be a demand for housing, new streets and new buildings to house the goods and services provided to that population.

The projection accepted for the judgment model for construction employment was made by the principal methodology of the study i.e. determining the best regression relationship between time and the estimated annual employment and projection of same by the equation derived. The results of this projection were estimates of 3,984 for 1975 and 4,546 for 1980. This represents an increase of better than 100 percent between 1960 and 1975, whereas the NPA projected a national increase of 83 percent between 1960 and 1985. Nevertheless the estimated growth since 1960 (to 1967) alone is believed to have been about 70 percent (to 1967), and the last year was not a peak for this period. Growth in covered employment from 1957 to 1967 was at a rate of about 5.9 percent annually. At that rate, applied to the base estimate of 3,279 in 1967, the 1975 employment would be 5,187 and the number by 1980 would reach 6,908. While such an increase is presumably possible if the past pace were to continue, it was not deemed likely based on the information developed in this study. The previously derived estimate of 3,984 for 1975 and 4,546 were therefore included in the judgment model, with the caution that annual growth should be carefully scrutinized and adjustments made when specific trends develop.

PART VIII

EMPLOYMENT FORECAST: SUMMARY OF THE JUDGMENT PROJECTIONS AND SOME IMPLICATIONS FOR THE FUTURE

In the preceeding section each of the major industry groups and many subclassifications were examined, analyzed and employment projected to 1975 and 1980. In most cases two or more projections were prepared for the industry group under consideration. The best or most likely alternative was then chosen to be included in what was termed "the judgment model" forecast.

The judgment model is simply a summation of the best projections for the various industry groups. Because several projections were prepared for most industry groups, the combinations of these are endless and many alternative summaries could have been prepared. It was the consensus of the study staff, however, that it was more logical to choose the most likely projection for each industry group and combine these into one total rather than strive for an arbitrary range into which all possible alternatives could be fitted. If the choice of any given prediction proves inaccurate in the future, the chosen forecast will be replaced by a better alternative.

At this point it should perhaps be emphasized that the projections of this study are, as the name implies, simply judgments of the potential level of employment in a given area. They should not be constructed as actual statements as to the exact number that will be employed in a given industry. To provide the latter is beyond the realm of possibility, for future events which shape the economic focus of a community are impossible to predict. This study represents an attempt to judge the approximate level of employment presuming that trends in the immediate past, plus analysis of known factors of the present will provide a reasonable guide to the future.

In a word no catastrophic shock to the equilibrium of the economic area is forecast, although the smaller an area is the more responsive it is to such external forces. For example, imagine the changes in the present structure which would have resulted if the G.E. Plant did have 3,500 employees. Such level would have placed it second only to the University in economic importance to the county.

Projected Growth of Resident Employment

The total resident employment in 1967 was estimated to be 37,553. This is projected to increase to 47,350 by 1975 and 53,515 by 1980 (See Table XXII). This would represent an increase from 1967 of 26 percent by 1975 and a total of 42.5 percent by 1980. This is a period of 13 years. By way of comparison, the estimated growth from 1950 to 1967 (17 years) was approximately 88 percent.

The past and projected growth in total resident employment is depicted on Chart XXIV. As the graph indicates the very substantial growth rate of the fifties was surpassed in the sixties. The forecast is for a gradual levelling off from 1967 to 1975, with another small decline in the growth rate from 1975 to 1980. In very general terms the

the rates of growth from various periods are as follows:

1950-1960	3.2 percent per year
1960-1967	4.7 percent per year
1950-1967 (total period)	3.8 percent per year
1967-1975	3.4 percent per year
1975-1980	2.5 percent per year
1967-1980 (total period)	2.7 percent per year

Despite the fact that a decline in the growth rate is predicted, it still is a very high rate. Were it not for the tremendous growth experience of the immediate past, and the growth rate for Florida in general, one would be tempted to reevaluate the projections to look for possible overoptimistic predictions. By way of comparison the United States employment grew at a rate of 1.2 percent per year from 1950 to 1965 vs. an estimated 3.8 for Alachua County. The National Planning Association's predicted rate for the period 1965-1985 for the United States is 1.8 percent per year, compared to 2.7 for the County.

Changes in employment in the individual components are shown in Table XXII and graphically on Chart XX V. Some of the rates of growth in the components industries exceed the overall rate while others actually show a decline. Of the major classifications only agriculture, forestry and fisheries is projected to lose employment between now and 1980. Some of the sub-classifications, such as lumber and wood products and railroads and railway express are also predicted to decline, although the major group of which they are a part is expected to increase.

Composition of Future Employment

The composition of the present and projected employment is shown in Table XXIII and can be seen in Chart XXV. No major structural changes are expected in the general composition for the next several years. Some obvious trends are expected to continue, such as the decline of agriculture as a percentage of the whole, while others are expected to maintain their position relative to the County's growth. Retail trade is expected to improve its share by a couple of percentage points; the transportation, communication and utilities industry group is expected to slip slightly; manufacturing and construction will remain about the same. Perhaps of most significance, services in general and education in particular are expected to peak at about 50 percent and 26 percent, respectively, of the total employment. This is in line with the earlier discussion regarding the University employment forecasts and the 25,000 enrollment ceiling.

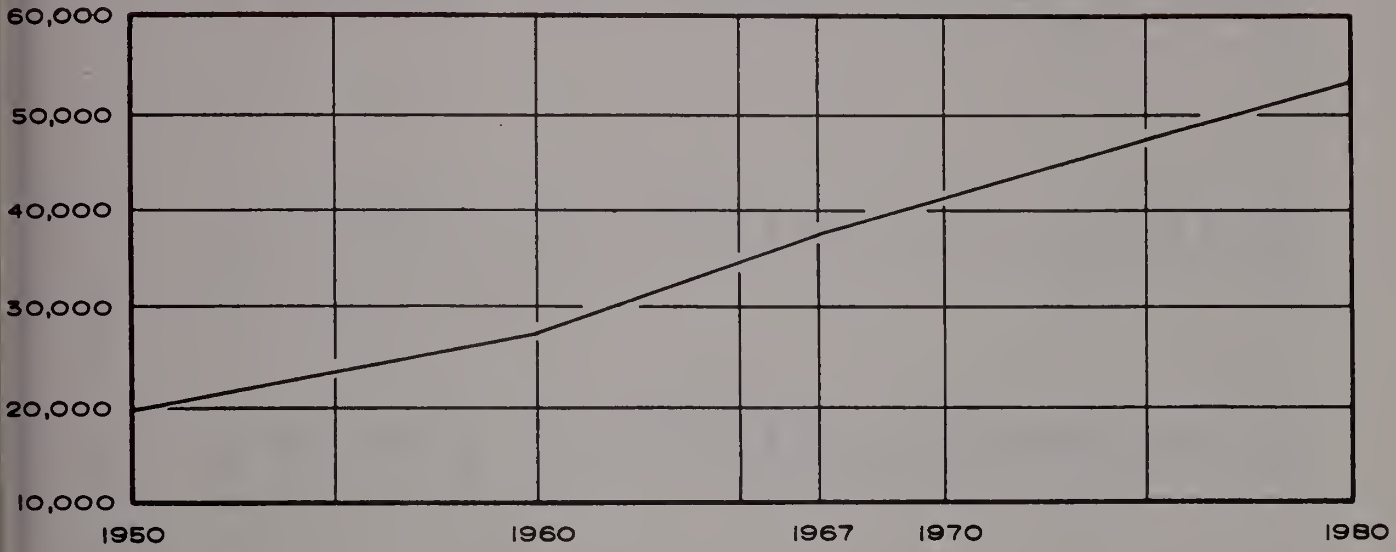
It may be noted that there is a close parallel between what is forecast for total employment and that for education. As the University is the largest employer in the area with a considerable share of the total employment, it is natural to expect that the

CHART XXIV

PAST AND PROJECTED TOTAL RESIDENT EMPLOYMENT

ALACHUA COUNTY

1950 - 1980



SOURCE: PLANNING DIVISION ESTIMATES

TABLE XXII

PAST AND FUTURE RESIDENT EMPLOYMENT, ALACHUA COUNTY
1950–1980

	1950	1960	1967	1975	1980
Agriculture, Forestry & Fisheries	4,548	2,324	1,066	1,140	1,018
Mining	42	120	181*	219	254
Manufacturing	1,595	2,542	3,148	3,799	4,272
Furniture, Lumber & Wood Products	876	574	585	530	500
Food and Kindred Products	268	663	758	881	968
Electrical Machinery, Equipment and Supplies	3	518	892	1,266	1,565
Other	448	787	913	1,122	1,239
Transportation, Communications and Public Utilities	992	1,217	1,290	1,477	1,585
Railroads and Railway Express	421	234	140*	126	112
Trucking and Warehousing	60	127	160	205	233
Other Transportation	157	187	167*	216	236
Communications	206	410	508	645	733
Utilities	148	259	295*	285	271
Retail Trade	2,967	4,376	5,936	7,806	9,275
Food and Dairy Products	525	765	1,366	1,493	1,780
Eating and Drinking Places	618	785	1,557	1,863	2,413
Other Retail Trade	1,824	2,826	3,013	4,450	5,082
Wholesale Trade	396	637	838	1,123	1,273
Finance, Insurance, Real Estate	424	934	1,488	1,971	2,322
Services	6,872	12,124	18,770	23,603	26,265
Other Services	2,342	4,134	8,136	8,992	10,516
Household Services	1,171	1,841	1,603	1,925	1,616
Education Services	3,359	6,150	9,031	12,686	14,133
Local Public Administration	623	1,068	1,557	2,198	2,705
Construction	1,489	1,934	3,279	3,984	4,546
Total	19,948	27,277	37,553	47,320	53,515

* Ratio of trend data stopped at 1966, 1967 extended by interpolation.

Source: Planning Division Estimates

TABLE XXIII

PERCENTAGE DISTRIBUTION OF PRESENT AND PROJECTED RESIDENT EMPLOYMENT BY INDUSTRY GROUP

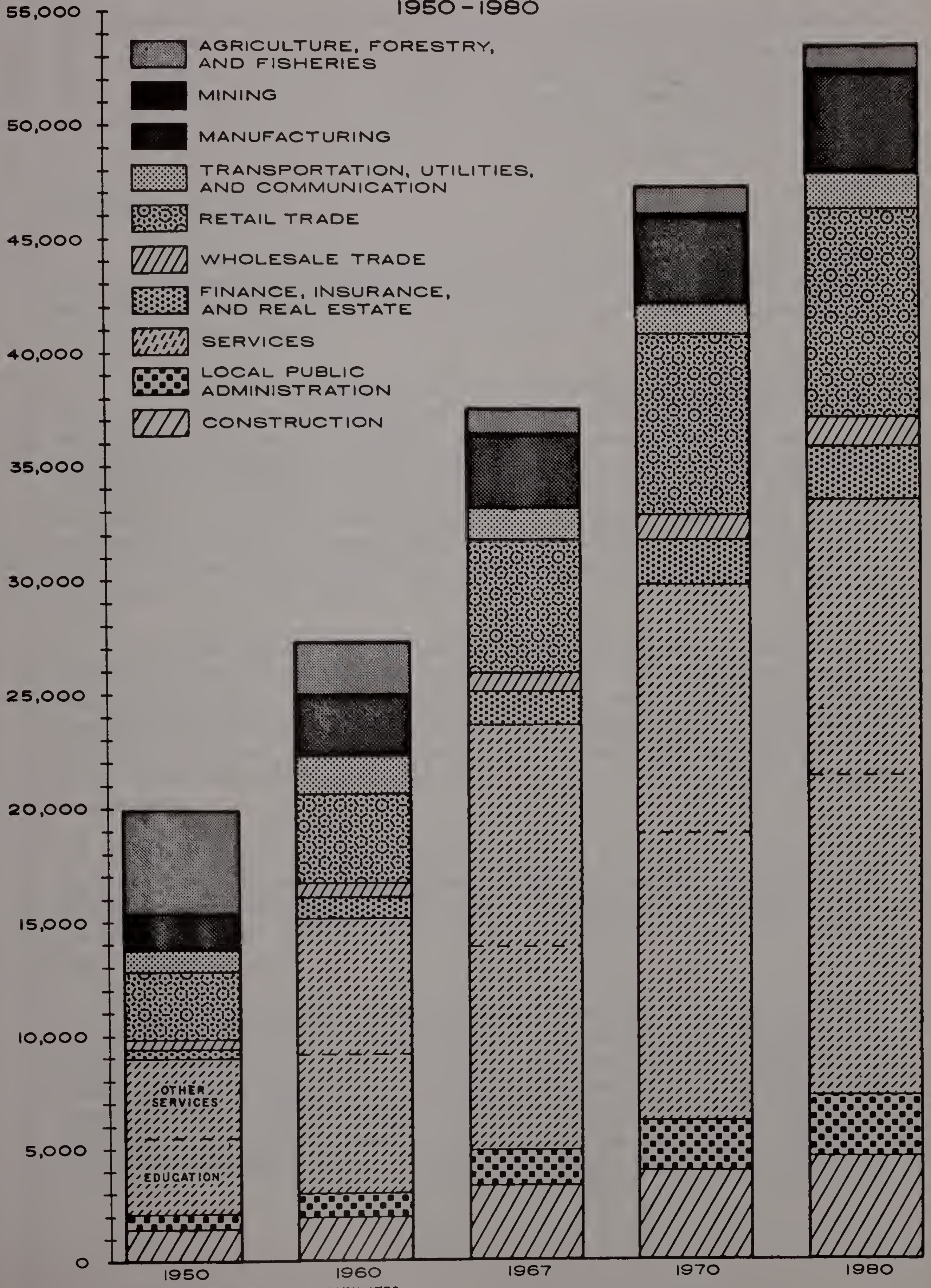
Alachua County, 1967 & 1980 & 1975

	1967	1975	1980
Agriculture, Forestry & Fisheries	2.84	2.41	1.90
Mining	.48	0.46	0.48
Manufacturing	(8.38)	(8.03)	(7.98)
Furniture, Lumber & Wood Products	1.56	1.12	0.93
Food & Kindred Products	2.02	1.86	1.81
Electrical Machinery, Equipment & Supplies	2.37	2.68	2.92
Other	2.43	2.37	2.32
Transportation, Communications & Utilities	(3.44)	(3.12)	(2.96)
Railroads & Railway Express	0.37	0.27	0.21
Trucking & Warehousing	0.43	0.43	0.43
Other Transportation	0.50	0.46	0.44
Communications	1.35	1.36	1.37
Utilities	0.79	0.60	0.51
Retail Trade	(15.81)	(16.50)	(17.33)
Food & Dairy Products	3.64	3.16	3.32
Eating & Drinking Places	4.15	3.94	4.51
Other Retail Trade	8.02	9.40	9.50
Wholesale Trade	2.23	2.37	2.38
Finance, Insurance, & Real Estate	3.96	4.17	4.34
Services	(49.98)	(49.88)	(49.08)
Private Household	4.27	4.07	3.02
All Other Services	21.66	19.00	19.65
Education	24.05	26.81	26.41
Local Public Administration	4.15	4.64	5.05
Construction	8.75	8.42	8.50
	100.00	100.00	100.00

( ) Numbers in ( ) are sub-totals

Source: Planning Division Estimates

CHART XXV
COMPOSITION OF THE RESIDENT EMPLOYMENT, PAST AND PROJECTED
ALACHUA COUNTY
1950 - 1980



SOURCE: PLANNING DIVISION ESTIMATES

latter should be greatly influenced by the former. Nevertheless, it is the conclusion of this study that reliance on the University as the main bulwark of the economy can and will deminish over time as the economy diversifies further. This is expected as the county increases in terms of population, concentration of workers, jobs, goods and services. As the county becomes more and more urban, it will become more attractive to new industry and new growth regardless of the University.

Implications of Growth

The magnitude of the growth in employment has been outlined in the preceeding sections. The question may logically be raised -- what does this all mean in terms of the future of Gainesville? First of all some general observations on economic factors in the future are in order.

The United States continues to grow at a remarkable rate. Population by 1985 is expected to be in the neighborhood of 266 million, or 38 percent higher than 20 years earlier. The growth of Florida is expected to be several times this rate, as the attractions of its natural amenities continue to make it one of the fastest growing states in the nation. National employment is expected to be up 44 percent in this same period, with one out of every 2.6 persons participating in the civilian labor force. Finally, the gross national product is expected to grow into the trillions by the end of the 80's. Without question, the overall economic growth of the economy is expected to be at an accelerated pace in the years ahead.

One of the more widely discussed implications of this economic expansion is a higher per capita income, with more people moving up in the income classifications. This in turn will mean more demand for local goods and services (which fact incidentally is reflected in the projections for retail trade as the projected growth therein exceeds the 1960 ratio of total people to employment in this area) including governmental services. It may also mean an upward movement in quality as well as quantity demanded in such goods.

Another implication is increased leisure time. The tremendous migration to Florida with its many natural leisure time activities, is a testimony to the increase in time for non-work activities such as recreation, hobbies and cultural pursuits. This too has a direct bearing on those sectors of the economy, private and public, which cater to these needs.

Perhaps the most positive implication of economic growth is that there will be change. First of all there will be more people, the extent of which will be discussed in the following section. More people in turn will place additional demands on those community facilities which are now operating at capacity. Such things as the transportation network, particularly around Gainesville where the lions share of the growth will take place, the utility system, the school system, the park system -- all these and even private services will have to respond to this change. Whether the change works

for good or bad will depend on the community's goals, values and attitudes and the responsiveness and capability of its leaders. That there will be growth is not a question -- there will be. The kind and nature of such growth is the central question, which must be squarely faced.

Growth for growth's sake alone can be a mixed blessing. Take for example growth in the manufacturing sector. Earlier it was pointed out that manufacturing based economies generally have a relatively high wage structure. This does not mean however, that all manufacturing is good and should be encouraged to locate in the community. Many manufacturing concerns can create a drain greater than its contribution to a community. Certain industries create special problems due to the obnoxious odors or pollution or by their appearance. Or they may pay a wage which ultimately will lower the overall average of the community.

Therefore, encouragement of industry should be on a selective basis concurrent with the desires and wishes of the people of the community. Certainly there are two sides to most issues. An industry, even though paying relatively low wages, might be just what is needed if there is a serious unemployment, or under employment problem in the area. An industry that is aesthetically unpleasant could bring a large return to the community by exporting its products and paying high wages.

From all indications the county and/or particularly Gainesville can afford to be somewhat selective if it should choose to actively pursue a program to recruit new industry. The high proportion of workers in government, primarily for the University, provides a very stable base from which to work. The fluctuations attendent to the business cycle are felt less in this atmosphere than in a community dominated by private industry. This does not mean the community can be complacent. Indeed, if the enrollment ceiling at the University is enforced, there could eventually come a time when growth would slow to a crawl.

The first prerequisite for continued expansion is that it must be in the base sector i.e., it should provide either goods or services for export to bring money into the county from the outside. The principal industries of the base type are manufacturing, resource extractors, such as mining or oil wells, the export of agricultural products, tourism and in the case of Gainesville the University.

It has been suggested by many people that because of the University, the community should be a prime candidate for the development of a research complex similar to the Harvard - M.I.T. area or the Los Angeles, California Tech complex. The influence of the medical center has been successful in attracting the new Veteran's Hospital, which incidentally became one of the County's largest employers, and reportedly was attractive to several medically oriented industries contacted by a recent promotion trip to several larger cities in the north. There also appears to be a very good chance that a hospital to treat persons with serious burns will locate in Gainesville because of the medical center.

There are some very serious considerations which should be taken into account before relying too heavily on the University to create an atmosphere which will attract the desired industry. First of all there is competition. Probably there are few communities in the county with a reasonably large college which does not have the same idea of its attraction to private industry. Secondly, the basic resources of a University are its pool of "brain power" and its basic research. The brain-power can be more easily transported to the industry than vice versa, and despite its academic excellence the University of Florida is a state supported institution which very often cannot afford the high cost of pure research in difference to their role of teaching.

Research activities, if they can be attracted, are normally considered a welcome addition to the community. They not only tend to provide an economic stimulus, but are socially and culturally very acceptable. At the same time research industries can be far less demanding on community resources in terms of city services and social welfare needs. The research industry, in short, is generally a desirable addition to the economy of a community if it can be established.

While selection of the type of manufacturing industries should be dictated by the community's overall goals and objectives, there are several considerations which generally serve as guidelines. One is that it should be in a growth industry. Some that are considered generally prospective growth industries are: electrical machinery, instruments, transportation equipment, plastics, and to a somewhat lesser degree chemicals and fabricated metals. There is also a large list of industries sometimes called exotic whose potential has not yet been fully determined. These include, for example, maser and laser applications, transistors, micro-miniaturization and many others. As mentioned earlier, one local industrialist pointed out that any type of small assembly operation would probably be quite successful here.

Another desirable characterization generally sought in new industries is relatively high wages. However, it must be pointed out that there apparently is no pool of highly skilled workers in this area who could command higher manufacturing wages. Other characteristics desired are: efficient, competitive firms; those which export most of their product (and thus have the greatest multiple effect on the economy); firms which have a relatively stable employment cycle; generally manufacturers of non-durable goods or light consumer durables; firms which will help maintain a diversity in the overall economy; firms with high research and development characteristics and finally, firms which are soundly financed and have good management, and are likely to be a productive addition to the community.

PART IX
POPULATION FORECASTS: 1975 and 1980

Projected Population of Alachua County 1975 and 1980

It is generally held among demographers that while the population of a larger area can be reasonably projected by the use of certain assumptions covering fertility and mortality rates, a smaller area is much more susceptible to non-demographic factors. It is also generally held that the key non-demographic factor is economic opportunity -- to be more specific, job opportunity. Thus if the total number of jobs that will be available in a given area can be forecast, the total population can be derived. This is one of the traditional purposes of an economic base study.

The total resident employment for Alachua County has been projected. Therefore, an estimate was prepared on the expected ratio of employees to total population. In 1950 this ratio was about one employee out of every 2.86 people or the equivalent of 35 percent of all persons employed. By 1960 the percentage of people working had increased from the 1950 rate to 36.7 percent or one out of every 2.72 persons. This was an increase in the percentage at a rate of about one-half of one percent annually. It is assumed that this trend would continue, and the percentages by 1975 and 1980 will be approximately 39.8 and 40.8 respectively.

It should be noted that this increase in the proportion of the total population in the work force is contrary to the trend nationally and of that in Florida. The reason for the latter declining percentage is believed to be the increasing proportion of the total population in the non-working age groups i.e., those under 14 and over 65. While this could also be true for the County, it has been more than offset by the ever increasing enrollment at the University, whose students are included in the working age brackets.

The question has been raised that if the University is to have an enrollment ceiling, would this not have the effect of offsetting the increasing proportion of the total population who are in the work force. After much study it was concluded that such would not be the case for the forecast period, although eventually it should level off. The reasons for this conclusion are several. First of all, if the estimate of this study of the total resident employment in 1967 is correct, and the total estimated population for the same year which was prepared by the Bureau of Economic and Business Research at the University is also correct, then the proportion of all the total population who are working already exceeds 40 percent. If the population estimate is conservative, as has been alluded to previously, this amount probably has not been reached but it does indicate that the higher levels will be approached, since the enrollment ceiling has not yet been reached. In the second place, even after the ceiling is reached there will necessarily be a considerable time lag before any reduction in the percentage begins to be felt. It will take several years for the non-working age groups to appreciably increase their percentage of the total population. Further-

more, and this is of major importance, the desired student mix will not be reached until some time after the enrollment ceiling is met, if indeed the ceiling still exists at that time. The net gain in the later stages will be in graduate students. These are the students most likely to work and to have wives who work. Therefore, even if the student enrollment gradually diminishes as a percentage of the total population, the number of students in the work force will not diminish at the same rate.

Based on these considerations, the best judgment forecast of the total population of Alachua County by 1975 will be 118,950. The forecast for 1980 is 131,100. To provide a comparison to these figures, a high and low projection was also prepared based on different assumptions. For the low estimates, it was assumed as fact that the percentage of persons in the work force in 1960 was 40.8 percent, and that the rate of increase for the period from 1950 to 1967 would continue until 1973 (when the enrollment ceiling is expected to be reached) and then would level off at that point. The proportion would then be about 42.6 percent, which would result in total population projections of 111,100 for 1975 and 124,500 by 1980. These are the most conservative estimates made and are believed to be much too low unless some major change occurs in the economic structure of the county.

The third and final projection is based on the assumption that the gradually increasing proportion of employees in the total population has peaked at a point slightly higher than percentage of the United States. It was assumed that the county would more nearly approach the national average than that of Florida because of the latters higher percentage of persons of retirement age. The 1960 national percentage was estimated at about 37.2, which was down from 39.5 in 1950. Since the NPA projects that the rate will increase slightly by 1985, a rate of 37.5 was calculated for the county, based on these assumptions. At that rate the total population would be 126,200 by 1975 and 142,700 by 1980. (This compares with 128,500 and 145,300 if the local 1960 rate were to prevail.)

As with the employment projections, one of the potential alternatives was chosen as the best judgment choice for this study. It is the medium forecast of 118,950 for 1975 and 131,100 for 1980. This forecast will form the basis for further studies in the program.

Estimated Population of the Gainesville Urban Area

Earlier in this report it was pointed out that the primary economic forces which shape the destiny of the City of Gainesville and the urban region of Gainesville extend beyond the artificial borders which might be drawn around them. A very good example of this is the General Electric Plant, which is an important economic force but is not located in the urban area. The fact which makes it possible for the GE Plant to locate outside the primary urban area from which it draws its workers, namely ease of movement by private passenger automobile, is also the major factor which makes it difficult to judge what percentage of tomorrow's county population will live within the urban area.

The only clue to go by is the past trend toward urbanization. Therefore, the same methodology utilized in projecting employment was utilized to provide a forecast of the future population of the urban area. In effect, the percentage growth of the urban area relative to the total county population was projected at the same rate as occurred between the last two census. The results, based on the judgment population projection, was 99,800 by 1975, and 115,400 by 1980. Based on the low and high population projection, the 1975 urban area population would range between 93,200 and 105,900, while the 1980 projections could range between 105,900 and 125,600.

These figures compare quite favorably with the projections arrived at in the Population Study, particularly for 1975. They are somewhat more conservative than the projections for 1980, but clearly indicate the reasonableness of both sets of projections. The results of both studies are as follows:

TABLE XXIV
POPULATION PROJECTIONS
Gainesville Urban Area
1975 and 1980

		Population Study	Economic Study
	Low	94,460	93,200
1975	Medium	100,780	99,800
	High	108,800	105,900
	Low	112,860	109,600
1980	Medium	120,340	115,400
	High	131,250	125,600

Source: Projections by the Planning Division

PART X. INCOME PROJECTIONS, 1975 and 1980

The total personal income can increase because of factors other than the simple expansion that accompanies population growth. If, for example, the mix of industries is changed appreciably, with more jobs proportionally in the higher paying brackets than was true before, the overall level of income will be increased. For the past decade at least, gains in production, which have been reflected in higher income, have increased at a faster rate than has the cost of living or inflation of the dollar. Consequently there has been an overall increase in real income over this period. Only recently has there been a serious threat of a reversal of this trend. Both of these factors were taken into account in the projections of this study. In addition, certain other assumptions are necessary to an understanding of the projections. It was assumed that the relative proportion of the total personal income derived from participation in production will remain at the same approximate level over the projection period. Income from participation in production is basically comprised of all income except property income and transfer payments (pensions and unemployment compensation and military compensation). The Bureau of Business and Economic Research at the University of Florida provided the raw data for determining this proportion, which was 83.36 percent, based on an average of the period from 1960 to 1966.

Another assumption was that each major source of income from participation in production (IPP) remains fairly constant relative to its relationship with other major sources of income, and that employment provides a direct measure of the growth or decline of such income. In other words, it was assumed that for a given industry source, such as manufacturing, for example, the 1966 ratio of IPP and 1966 employment would be proportional to the 1975 (or 1980) ratio of IPP to 1975 employment. Consequently, the 1975 IPP for manufacturing was estimated by the following formulas:

$$1975\ \text{IPP} = \frac{1966\ \text{IPP} \times 1975\ \text{employment}}{1966\ \text{employment}}$$

By estimating the income from participation in production for each major source, the different mix of employment is taken into account as well as the overall increase in employment. (It should be noted that services and government were combined inasmuch as education is a major government source but is covered under services in the major resident industry groups).

The other major sources of income, such as property income and transfer payments, were then projected at the same rate of growth forecast for income from participation in production. When added to the latter, the first tenative projection of the total personal income is derived. In order to arrive at a final projection of income it was also necessary to estimate the general growth in income which comes from the net

gain of production over inflation. The 1960-1966 rate of growth in personal income for Alachua County, based on constant dollars, was 2.74 percent per year. This amount is considerably lower than the increase in total income for the same period which was almost 70 percent, but the latter includes considerable inflation. The rate of constant dollar income was applied to the 1966 IPP which was then distributed on a percentage basis among the various sources of income and projected as outlined above.

The final projections of total personal income were $339,241,000 for 1975 and $413,956,000 for 1980. The reasonableness of this figure was checked by several means. For example, if the changing mix of employment is disregarded and only the change in total employment considered, an estimate based on the latter with the same 2.74 percent per year increase would be $346 million by 1975. Another crude estimate of the increase in income due to production gains was calculated by deducting the national consumer price index from an index of productivity, projecting this difference and applying it to the base employment from the increase in employment and changing mix. The results were remarkably close to the original estimate at $336.8 million for 1975. It was concluded therefore that the estimates of $339.24 million for 1975 and $413.96 million for 1980 were reasonable.

The above projections were made in terms of the 1966 value of the dollar. The 2.74 per year rate of increase in real income however, is fairly high compared to the national experience. It is based on a period in the history of Gainesville when the economy was expanding considerably, and in a period of unprecedented national prosperity. It therefore could prove to be somewhat optomistic in the years to come. On the other hand it represents a rate which is considerably less than that experienced in total personal income, including inflation i.e., in non-constant dollars.

The estimated total growth in personal income for 1966 to 1975 is calculated to be about 65 percent and from 1966 to 1980 about 100 percent. The growth from 1960 to 1975 would be almost 180 percent and about 240 percent by 1980.

Income Per Capita 1975 and 1980

The projected population for Alachua County in 1975 is 118,950. Based on that projection, the per capita income would be $2,852 as compared to $2,342 in 1966. This would be a total increase of less than 22 percent, on a 1966 based dollar. This compares with an estimated increase in employment of about 31 percent for the same period.

The National Planning Association has projected per capital income for the South Atlantic States for 1975 at $2,605 and for Jacksonville at $2,803, based on a 1960 constant dollar. This compares quite favorably to the estimates herein.

On the basis of the median population projection of 131,100 for 1980, the per capita income would be $3,158 by that date. This would be a 35 percent gain over 1966 and 11 percent increase over 1975.

Estimated Income of the Gainesville Urban Area, 1975 and 1980

The existing relationship of the Gainesville Urban Area to the rest of the County formed the basis for projecting average and total personal income for 1975 and 1980. More particularly, it was assumed that the difference between the average household income for the two areas, which was estimated for 1968, would still exist in 1975 and 1980. Essentially this relationship is that the average household income in the Urban Area is about 1.42 times greater than that of the rest of the County.

In order to find the household income of either area it was first necessary to estimate the number of occupants of group quarters, their income and the number of households in the county and each component area. Like the 1968 estimate it was assumed that only the group quarter occupants of the University would have any income of note not attributable to households. The amount of same was estimated by projecting the 1967 average income by the 2.74 percent per year increase forecast for the rest of the personal income. The number of occupants was assumed to be 55 percent of the 25,000 by 1975 and 55 percent of 26,000 by 1980. (The enrollment ceiling is in terms of full time equivalent students, which result in higher number of actual students. It is presumed here that the larger number will be met by 1980.) The total number of households for the Urban Area was found by dividing the remaining Urban Area population by the average household size projected in the Population Study. The number of the households in the remainder of the county was obtained by first decreasing the 1960 county household rate by the percentage decline predicted for the Urban Area and dividing into the remaining population of the county.

As a result of the above assumptions the following income characteristics are forecast:

		1975 (000,s)	1980 (000,s)
1.	Total personal Income (County)	$339,241	$413,956
	a. Occupants of group quarters	34,100	40,612
	b. Urban Area, less a.	264,996	337,684
	c. Rest of the County	40,145	35,660
	d. Income of the Urban Area (a & b)	299,099	378,296
2.	Average Household Income (County)	9,111	9,891
	a. Urban Area	9,614	10,287
	b. Rest of County	6,771	7,245

In summary, the total personal income of the county is expected to grow by 51 percent from 1968 to 1975 and 85 percent from 1968 to 1980. The Urban Area household income is expected to grow by 21 percent from 1968 to 1975 and 29 percent by 1980. At the same time the total personal income for the rest of the county is expected to decline by less than 2 percent from 1968 to 1975, and decline by 14 percent by 1980. The average household income of the rest of the county is projected to increase by 21 percent and 29 percent for these periods, however, reflecting the fact that the number of households is projected to decline in the rest of the county for this period.

APPENDIX A

ADJUSTMENTS TO 1950 CENSUS DATA FOR SHIFTS IN CLASSIFICATION OF INDUSTRIES FROM 1950 to 1960

Comparison tables in the 1960 Census provided state employment for 1950 comparable to the 1960 industrial classification. To adjust county data, the reported data for 1950 as shown in the 1960 Census - i.e. the adjusted data* was divided by the 1950 Census reported data** to establish ratios for those industries where shifts had occurred. Table A-1 shows those industry groups in which such shifts were significant in either the male or female category. Those industries not shown had no significant shift. The ratios developed in Table A-1 were used in Appendix B to adjust Alachua County data.

* /2 / Tables 62 and 126

** /_1_/, Table 83

TABLE A-1

CLASSIFICATION ADJUSTMENT RATIO, FLORIDA

	Male		Female		Ratio	1950 to
	1950 in 1960 (1)	1950 in 1950 (2)	1950 in 1960 (3)	1950 in 1950 (4)	1950 in Male (5)	1960 Female (6)
Primary Metals Industries	717	690	41	30	1.039	1.376
Fabricated Metal Industries	3,254	3,214	441	441	1.012	1.000
Machinery, Except Electrical	2,568	2,422	216	221	1.060	0.977
Electrical Machinery, Equipment, & Supplies	802	743	185	170	1.079	1.088
Motor Vehicles and Motor Vehicles Equipment	567	577	96	97	0.983	0.990
Other Transportation	3,021	3,015	186	186	1.002	1.000
Other Durable Goods	4,800	4,951	1,098	1,115	0.970	0.985
Food and Kindred Products	19,785	18,016	6,197	6,060	1.098	1.023
Textile Mill Products	403	395	216	216	1.020	1.000
Apparel & Other Fabricated Textile Products	1,093	1,120	2,946	2,946	0.976	1.000
Printing, Publishing, & Allied Products	8,456	8,430	2,185	2,185	1.003	1.000
Chemical and Allied Products	5,042	5,270	469	484	0.957	1.000
Other Non-durable Goods	10,820	10,642	6,724	6,664	1.017	1.009
Railroad & Railway Express Service	19,818	19,772	1,113	1,113	1.002	1.000
Truck Service & Warehousing	6,829	7,998	503	670	0.854	0.751
Other Transportation	23,787	22,649	3,249	3,082	1.050	1.054
Communications	5,419	4,421	6,070	5,772	1.226	1.052
Wholesale Trade	37,506	38,149	10,567	10,704	0.983	0.987
Food & Dairy Products Stores	24,011	25,287	10,934	10,957	0.950	0.998
Eating & Drinking Places	20,251	20,301	24,786	24,786	0.998	1.000
Other Retail Trade	72,558	72,246	37,870	37,925	1.004	0.999
Business Service	4,219	5,782	1,689	2,097	0.730	0.805
Repair Services	18,478	18,674	1,021	1,003	0.980	1.017
Private Households	9,627	9,627	50,749	52,009	1.000	1.014
Entertainment & Recreation Services	11,021	12,019	2,713	3,011	0.917	0.901
Medical and Related	8,990	8,990	18,645	17,385	1.000	0.932
Other Professional & Related	12,835	11,291	6,531	6,063		1.077

Source: Columns (1) and (3) / 2, Table 62 and Table 126 /

Columns (2) and (4) / 1, Table 83 /

Columns (5) : Column (1) divided by Column (2)

Columns (6) : Column (3) divided by Column (4)

APPENDIX B

ADJUSTMENT OF CENSUS DATA FOR UNDERENUMERATION OF CIVILIAN LABOR FORCE AND EMPLOYMENT, 1950 & 1960

It was assumed that underenumeration for given categories of employment and the labor force as a whole would be nearly the same in smaller areas as shown for the United States. Therefore, the national rates which were based on matched samples compiled by the census were used to adjust the data for Alachua County. This adjustment involved four stages:

1. Adjustments to the Civilian Labor Force by Age and Sex

Underenumeration rates were applied to the Civilian Labor Force numbers by age and sex after first estimating the age-sex distribution of the civilian labor force for 1950. Age distribution of the labor force was not given for counties in the 1950 Census, but was for the states. Therefore, the County age distribution was estimated on the basis of state participation rates. Sex and place of residence, i.e., urban, rural-farm and rural non-farm, were given in the census for the counties. Table B-1 shows the participation ratio calculated for Florida by age, sex and place of residence. This rate was found by dividing the state population by the civilian labor force, after first subtracting institutional and military populations from the former. These rates were then used in Table B-2 in finding the estimated civilian labor force for the county. The operations involved in finding same are explained in the footnotes to that table. In 1960, labor force was broken down by age groups in the census and estimates not necessary.

Civilian Labor Force Underenumeration Rates, 1950 and 1960 (Table B-3)

Civilian Labor Force underenumeration rates, 1950 and 1960 were multiplied by the civilian labor force by age and sex for the county. The method is demonstrated in Table B-4.

2. Adjustments for Underenumeration by Employment Status, 1950 and 1960

Rates for underenumeration by employment status and class of worker (Table B-5) were applied to the corresponding numbers of the county. Columns (2) and (5) in Table B-6 show the results of this multiplication for Alachua County.

3. Adjustment of Total Civilian Labor Force by Employment Status to Total Civilian Labor Force by Age and Sex

The two civilian labor force totals from "1" and "2" above do not agree, not

only because of the preceeding estimations but also because of the different industrial mixes in smaller areas compared to that of the United States. The total civilian labor force by employment status was adjusted to total civilian labor force by age and sex on the assumption that the different industrial mix was the major cause of the disagreement. Columns (4) and (8), Table B-6, illustrates the method of adjusting Alachua to its total civilian labor force by age and sex.

4. Adjustment of Employment by Industry for Underenumeration and Industry Not Reported, 1950 and 1960

The change in total employment, from #3 above, along with the number in "industry not reported" was distributed to industries in proportion to numbers shown in the census volumes. The procedure is demonstrated in Table B-7 for Alachua County, 1950, and B-7A for 1960.

ESTIMATED CIVILIAN LABOR FORCE PARTICIPATION RATE, FLORIDA
1950

Age and Sex		Population	Labor Force		Non-Civilian	Estimated Military	Institution Population	Adjusted Population	Participatio Rate
		(1)	Total (2)	Civilian (3)	(4)	(5)	(6)	(7)	(8)
MALE									
14-17	Urban	40,685	9,745	9,670	75	75	253	40,357	.239611
	Rural Non-Farm	21,555	5,585	5,500	85	85	687	20,783	.264639
	Rural Farm	10,575	4,225	4,215	10	10	0	10,567	.308883
18-24	Urban	87,360	65,245	57,340	7,905	7,857	607	78,896	.726779
	Rural Non-Farm	43,615	36,480	24,510	11,970	11,901	1,622	30,092	.814502
	Rural Farm	10,980	9,610	9,535	75	75	0	10,905	.874369
25-34	Urban	140,330	1,218,100	118,835	9,265	9,209	992	130,129	.913216
	Rural Non-Farm	54,980	48,865	42,055	6,810	6,769	2,389	45,822	.915791
	Rural Farm	12,855	12,190	12,125	65	65	0	12,790	.948006
35-44	Urban	132,725	124,495	122,340	2,155	2,144	1,094	129,487	.944805
	Rural Non-Farm	48,555	43,925	42,570	1,355	1,348	1,618	45,589	.933778
	Rural Farm	14,465	13,940	13,890	50	50	0	14,415	.963579
45-64	Urban	185,955	151,685	151,095	590	585	1,548	183,822	.821964
	Rural Non-Farm	62,760	49,015	48,750	265	263	1,811	60,686	.803315
	Rural Farm	22,670	20,460	20,750	75	75	0	22,595	.902190
65+	Urban	76,225	21,510	21,485	25	25	1,315	74,885	.286906
	Rural Non-Farm	28,570	7,335	7,315	20	20	969	27,581	.265219
	Rural Farm	10,090	5,210	5,160	50	50	0	10,040	.513944
	Total	1,004,950	1,847,620	717,140	40,845	40,606	14,905	949,441	

Table B-1 Continued on next page

Age and Sex		Population	Labor Force		Non-Civilian	Estimated Military	Institution Population	Adjusted Population	Participati Rate
		(1)	Total (2)	Civilian (3)	(4)	(5)	(6)	(7)	(8)
FEMALE									
14-17	Urban	41,460	4,090	4,085	5	4	190	41,266	.098989
	Rural Non-Farm	20,805	2,320	2,320	0	0	229	20,576	.112802
	Rural Farm	9,670	1,230	1,230	0	0	0	9,670	.127198
18-24	Urban	100,530	44,185	44,090	145	112	233	100,185	.439521
	Rural Non-Farm	36,655	10,965	10,825	140	108	219	36,328	.297980
	Rural Farm	9,795	3,070	3,070	0	0	0	9,795	.313425
25-34	Urban	189,945	65,505	65,305	200	154	561	159,230	.410078
	Rural Non-Farm	56,015	15,655	15,485	170	131	371	55,513	.278858
	Rural Farm	13,440	4,050	4,040	10	8	0	13,432	.300752
35-44	Urban	149,550	67,505	67,435	70	54	767	148,729	.453387
	Rural Non-Farm	47,170	16,695	16,620	75	58	300	46,812	.354977
	Rural Farm	14,930	4,425	4,395	30	23	0	14,907	.294788
45-64	Urban	203,310	66,610	66,585	25	19	1,449	201,842	.329883
	Rural Non-Farm	60,790	16,230	16,200	30	23	385	60,382	.268283
	Rural Farm	20,360	4,810	4,805	5	4	0	20,356	.236037
65+	Urban	88,005	5,915	5,915	0	0	1,436	86,569	.068327
	Rural Non-Farm	25,520	1,125	1,125	0	0	375	25,145	.044741
	Rural Farm	7,765	590	590	0	0	0	7,765	.075982
	Total	1,065,715	334,975	334,120	905	698	6,515	1,058,502	

Sources: Columns (1), (2) and (3) /1 / Table 66 /

Column (4) : Column (2) less Column (3) equals the non-civilian labor force.

Column (5) The total count military population for males (40,606) and females (698) was taken from /2 Table 53 /. It was assumed that the Non-Civilian Labor Force is made up primarily of armed forces personnel; however, since the totals of these two figures are not the same, the reported armed forces figure was distributed in the table according to the percentage distribution in the Non-Civilian labor force.

Column (6) /4, Table 35 / ---- Column (7) Total population (Column 1) less Armed Forces (Column 5) and Institutional (Column 6

Column (8) Participation Rate equals (Column 3) divided by (Column 7).

TABLE B-2

ESTIMATED UNADJUSTED CENSUS CIVILIAN LABOR FORCE BY SEX, AGE AND RESIDENCE ALACHUA COUNTY, FLORIDA, 1950

Age and Sex		Civilian Population (1)	Institutional Population (2)	Adjusted* Civilian Population (3)	Preliminary Civilian Labor Force (4)	Correction Factor (5)	Estimated Civilian Labor Force (6)	Sub-Totals by Ages (7)
MALE								
14-17	Urban	831	9	822	202	.649056	131	
	Rural Non-Farm	449	23	426	113	.925567	105	
	Rural Farm	216	0	216	67	.972049	65	
								301
18-24	Urban	5,293	28	5,265	3,826	.649056	2,483	
	Rural Non-Farm	1,388	76	1,312	1,069	.925567	989	
	Rural Farm	490	0	490	428	.972049	416	
								3,888
25-34	Urban	2,927	22	2,905	2,653	.649056	1,722	
	Rural Non-Farm	1,783	53	1,730	1,584	.925567	1,466	
	Rural Farm	437	0	437	414	.972049	402	
								3,590
35-44	Urban	1,431	19	1,412	1,334	.649056	866	
	Rural Non-Farm	1,414	27	1,387	1,295	.925567	1,199	
	Rural Farm	533	0	533	514	.972049	500	
								2,565
45-64	Urban	1,546	3	1,543	1,268	.649056	823	
	Rural Non-Farm	1,761	3	1,758	1,412	.925567	1,307	
	Rural Farm	728	0	728	657	.972049	639	
								2,769
65+	Urban	501	2	499	143	.649056	93	
	Rural Non-Farm	792	1	791	210	.925567	194	
	Rural Farm	339	0	339	174	.972049	169	
							13,569	456
FEMALE								
14-17	Urban	646	15	631	62	1.08105	67	
	Rural Non-Farm	606	19	587	66	1.11244	73	
	Rural Farm	267	0	267	34	1.1922	41	
								181

...

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
8-24	Urban	2,358	41	2,317	1,018	1.08105	1,101	
	Rural Non-Farm	1,430	39	1,391	414	1.11244	461	
	Rural Farm	419	0	419	131	1.1922	156	
								1,718
5-34	Urban	2,163	25	2,138	877	1.08105	948	
	Rural Non-Farm	1,863	17	1,846	515	1.11244	573	
	Rural Farm	470	0	470	141	1.1922	168	
								1,689
5-44	Urban	1,529	25	1,504	682	1.08105	737	
	Rural Non-Farm	1,432	10	1,422	504	1.11244	561	
	Rural Farm	460	0	460	136	1.1922	162	
								1,460
5-64	Urban	1,816	9	1,801	594	1.08105	642	
	Rural Non-Farm	1,779	3	1,776	477	1.11244	531	
	Rural Farm	639	0	639	151	1.1922	180	
								1,353
5+	Urban	733	13	720	49	1.08105	183	
	Rural Non-Farm	827	4	823	37	1.11244	41	
	Rural Farm	278	0	278	21	1.1922	25	
							4,624	249

ources: Column (1) Source of original data: /1, Tables 41, 48, 49 /; Urban population was computed by subtracting rural non-farm, and rural farm, from total population. The model followed by this study /3 / subtracted from the total an amount for institutional and armed forces based on the proportion in the State population. Since service personnel are enumerated at the bases of which they are living and there were no such bases in Alachua County in 1950, no armed forces were deducted herein; although there were a few persons in the county primarily with the ROTC detachment at the University.

Column (2) Institutional population /4, Table 44 /

Column (3) Column (1) minus Column (2)

Column (4) Labor force participation rates (Table B-1) times the civilian population. (Column 3).

Column (5) Correction factor to adjust preliminary civilian labor force by age and sex to the total census reported for the County. /1 / Table 43, 48 and 49. This correction factor was calculated by dividing the preliminary total civilian labor force (by sex, urban, rural non-farm and rural farm, Column (4)) into the corresponding census reported civilian labor force. For example, the total reported male rural farm civilian labor force 2191 divided by rural farm preliminary (Column 4) 2,254 equals the correction factor of 0.972049.

Column (6) The estimated civilian labor force was calculated by multiplying the correction factor (Column 5) times the preliminary civilian labor force (Column 4).

TABLE B-3

UNDERENUMERATION ADJUSTMENT FACTORS* BY SEX AND AGE OF THE CIVILIAN LABOR FORCE UNITED STATES, 1950-1960

	1950				1960			
Age	MALE		FEMALE		MALE		FEMALE	
14-17	1.296	(35.0)	1.295	(17.1)	1.198	(-16.5)	1.064	(- 9.4)
18-24	1.037	(86.2)	1.034	(45.5)	1.047	(- 6.4) (- 2.5)	1.033	(- 3.4) (- 3.0)
25-34	1.019	(96.9)	1.083	(35.1)	1.010	(- 1.0)	0.987	(+ 1.3)
35-44	1.019	(96.9)	1.083	(35.1)	1.010	(- 1.0)	0.997	(+ 0.3)
45-64	1.022	(92.1)	1.088	(32.1)	1.023	(- 1.0) (- 3.5)	1.075	(- 2.9) (-10.7)
65 & Over	1.034	(45.9)	1.271	(8.9)	1.100	(- 9.1)	1.015	(- 1.5)

* The census volumes compared census numbers to those in a matched sample. These were converted to ratios of the matched samples to census figures by: (a) In 1950, using the reciprocals of the reported ratios (figure in parenthesis), and (b) in 1960, taking the recriprocal of 100 minus the reported ratio (number in parenthesis). Ratios were found by interpolation where it was necessary because of smaller age breakdowns.

Source: /5, page 52, Table Q_/
/6, page LXIV, Table AA/

TABLE B-4

UNDERENUMERATION FACTORS APPLIED TO THE CIVILIAN LABOR FORCE BY AGE AND SEX, ALACHUA COUNTY, FLORIDA 1950 and 1960

Age and Sex	Unadjusted (1)	1950 Underenumeration Rate (2)	Adjusted (3)	Unadjusted (4)	1960 Underenumeration Rate (5)	Adjusted (6)
MALE						
14-17	301	1.296	390	689	1.198	825
18-24	3,888	1.037	4,032	3,014	1.047	3,156
25-34	3,590	1.019	3,658	4,106	1.010	4,147
35-44	2,565	1.019	2,614	3,744	1.010	3,781
45-64	2,769	1.022	2,830	4,927	1.023	5,040
65 & Over	456	1.034	472	630	1.100	693
FEMALE						
14-17	181	1.313	238	336	1.064	358
18-24	1,578	1.032	1,628	2,034	1.033	2,101
25-34	1,689	1.017	1,718	2,427	0.987	2,395
35-44	1,460	1.017	1,485	2,144	0.997	2,138
45-64	1,353	1.019	1,379	3,001	1.075	3,226
65 & Over	119	1.034	123	287	1.015	291
TOTALS						
Male	13,569		13,996	17,110		17,642
Female	4,484		6,571	10,229		10,509
Both	18,053		20,567	27,339		28,151

Sources:

Column (1) From Table B-2
Columns (2) and (5) From Table B-3
Column (3) Column (1) times Column (2)
Column (4) /2, Table 83/ The total armed forces reported (77) were deducted from the total labor force by age spread on the same basis as the state proportions.
Column (6) Column (4) times Column (5)

TABLE B-5

UNDERENUMERATION ADJUSTMENT FACTORS BY EMPLOYMENT STATUS AND CLASS OF WORKER, UNITED STATES, 1950 and 1960

	1950				1960			
	MALE		FEMALE		MALE		FEMALE	
	Factor	Index of Gross Shift	Factor	Index of Gross Shift	Factor	Index of Gross Shift	Factor	Index of Gross Shift
Civilian Labor Force	1.023	- 2.2	1.073	- 6.8	1.027	- 2.6	1.028	- 2.7
Unemployed	1.221	-18.1	1.233	-18.9	1.046	- 4.4	111.5	-10.3
Employed	1.012	- 1.2	1.066	- 6.2	1.027	- 2.6	1.023	- 2.2
Agriculture	1.058	- 5.5	1.867	-46.4	1.157	-13.6	1.079	- 7.3
Non-Agriculture	1.004	- 0.4	1.040	- 3.8	1.012	- 1.2	1.015	- 2.0
Wage Salary Weeks	0.987		1.016		0.987		0.988	
Other Non-Agriculture	1.119		1.374		1.213		1.499	

Source: /2, Table 7, page LXIII / and /3, Table B-5 / The 1960 Census showed both 1950 and 1960 rates as indices of net shifts with the census compared to a matched sample (index of shift numbers). These were converted to ratios comparing the sample to the census by: 100.0 divided by 100.0 minus the index of net shift. No values were given for wage and salary or other non-agriculture. However, Harmes and his associates /3, Table B-5 / calculated a value from other sources which is included herein.

TABLE B-6

ADJUSTMENT FOR UNDERENUMERATION BY EMPLOYMENT STATUS AND CLASS OF WORKER, ALACHUA COUNTY, FLORIDA 1950 and 1960

Sex, Status of Employment and Class of Workers	1950				1960			
	Census Numbers (1)	Preliminary Adjustment (2)	Secondary Adjustment (3)	Adjusted to Labor Force (4)	Census Numbers (5)	Preliminary Adjustment (6)	Secondary Adjustment (7)	Adjusted to Labor Force (8)
MALE								
Civilian Labor Force	13,569	13,874	13,874	13,996	17,100	17,557	17,557	17,642
Unemployed	308	376	378	381	486	508	508	510
Employed	13,261	13,421	13,496	13,615	16,614	17,058	17,049	17,132
Agriculture	2,555	2,703	2,712	2,736	1,426	1,650	1,653	1,661
Non-Agriculture	10,706	10,749	10,784	10,879	15,188	15,370	15,396	15,471
Wage and Salary	6,086	6,007	5,796	5,847	8,592	8,480	7,922	7,960
Other	4,620	5,170	4,988	5,032	6,596	8,001	7,474	7,510
FEMALE								
Civilian Labor Force	6,413	6,881	6,881	6,571	10,229	10,512	10,512	10,509
Unemployed	194	239	239	228	325	362	363	363
Employed	6,219	6,630	6,642	6,337	9,901	10,124	10,149	10,146
Agriculture	818	1,527	1,420	1,355	485	523	527	527
Non-Agriculture	5,401	5,617	5,222	4,982	9,416	9,557	9,622	9,619
Wage and Salary	3,289	3,342	2,795	2,667	5,373	5,309	4,493	4,492
Other	2,102	2,902	2,427	2,315	4,043	6,060	5,129	5,127
TOTALS								
Civilian Labor Force	19,982	20,755	20,755	20,567	27,329	28,069	28,069	28,151
Unemployed	502	615	617	609	811	870	811	873
Employed	19,480	20,051	20,138	19,952	26,515	27,182	27,198	27,278
Agriculture	3,373	4,230	4,132	4,091	1,911	2,173	2,180	2,188
Non-Agriculture	16,105	16,366	16,006	15,861	24,604	24,927	25,018	25,090
Wage and Salary	9,397	9,349	8,591	8,514	13,965	13,789	12,415	12,452
Other	6,730	8,072	7,415	7,347	10,639	14,061	12,603	12,637

Sources: Column (1) / 1, Table 43 and 83 /. The number of wage and salary workers in agriculture were estimated by multiplying the State ratio of wage and salary workers in agriculture to the agriculture employment by the County total agriculture. This estimate was deducted from the County total wage and salary workers value given in the Census to obtain wage and salary workers in non-agriculture industries.

Table B-6 continued

TABLE B-6 Con't.

ADJUSTMENT FOR UNDERENUMERATION BY EMPLOYMENT STATUS AND CLASS OF WORKER, ALACHUA COUNTY, FLORIDA 1950 and 1960

Sources, Con't.:

Column (2)	Rates in Table B-5 multiplied by Column (1).
Column (3)	Sub-total values were adjusted to the civilian labor force value on the basis of the percentage distribution of the values in Column (2).
Column (4)	Column (3) adjusted to total labor force by age and sex in Table B-4, 1950. Total labor force by sex from Table B-4 was divided by total labor force by sex in Column (3) times individual values in Column (2).
Column (5)	/2, Tables 83 and 84 /
Column (6)	Rates in Table B-5 times Column (4).
Column (7)	adjustment to total civilian labor force in Column (6). See explanation Column (3).
Column (8)	Total labor force by sex in Column (7) adjusted to total labor force by sex in Table B-4. See explanation of Column (4).

TABLE B-7

EMPLOYMENT BY INDUSTRY GROUP ADJUSTED FOR UNDERENUMERATION AND INDUSTRY NOT REPORTED, ALACHUA COUNTY, FLORIDA 1950

	Census Reported Employment		Census Adjusted For Shifts In Classification		Census Adjusted For Underenumeration and Industry Not Reported		
	Male (1)	Female (2)	Male (3)	Female (4)	Male (5)	Female (6)	Total (7)
Total Employment	13,261	6,219	13,266	6,214	13,621	6,337	19,958
Agriculture	2,555	818	2,555	818	2,792	1,380	4,172
Forestry and Fisheries	345	19	345	19	358	18	376
Mining	38	3	38	3	39	3	42
Construction	1,406	31	1,406	31	1,460	29	1,489
Manufacturing							1,595
Furniture, Lumber and Wood Products	738	117	738	117	766	110	876
Primary Metals	21	0	22	0	23	0	23
Fabricated Metals	11	3	11	3	11	3	14
Machinery Except Electrical Equipment	65	2	69	2	72	2	74
Electrical Machinery, Equipment and Supplies	2	1	2	1	2	1	3
Motor Vehicles and Equipment	1	0	1	0	1	0	1
Other Transportation Equipment	1	0	1	0	1	0	1
Other Durable Goods	43	8	42	8	44	8	52
Food and Kindred Products	208	32	228	33	237	31	268
Textile Mill Products	69	6	19	6	20	6	26
Apparel & Other Fabricated Textiles	7	8	7	8	7	8	15
Printing Publications and Allied	75	26	75	26	78	24	102
Chemicals and Allied	102	8	98	8	102	8	110
Other Non-Durable Goods	18	2	23	6	24	6	30
Railroad and Railway Express	394	12	395	12	410	11	421
Trading and Wholesale	62	7	53	5	55	5	60
Other Transportation	127	19	133	20	138	19	157
Communications	82	104	100	109	104	102	206
Utilities and Service Services	134	10	134	10	139	9	148
Wholesale Trade	334	60	328	59	341	55	396

EMPLOYMENT BY INDUSTRY GROUP ADJUSTED FOR UNDERENUMERATION AND INDUSTRY NOT REPORTED, ALACHUA COUNTY, FLORIDA 1950

	Male (1)	Female (2)	Male (3)	Female (4)	Male (5)	Female (6)	Total (7)
Food and Drinking Products Storage	366	175	348	175	361	164	525
Eating and Drinking Places	279	350	278	350	289	329	618
Other Retail	1,199	613	1,204	612	1,250	574	1,824
Finance, Insurance and Real Estate	277	145	277	145	288	136	424
Business Service	54	21	39	17	40	16	56
Repair Service	286	20	283	20	294	19	313
Private Households	112	1,108	112	1,124	116	1,055	1,171
Hotels and Lodging	193	147	193	147	200	138	338
Other Personal Services	314	373	314	373	326	350	676
Entertainment & Recreation Services	158	37	145	33	151	31	182
Educational Government	2,128	1,098	2,128	1,098	2,209	1,030	3,239
Educational Private	53	69	53	69	55	65	120
Medical	143	350	143	326	148	306	454
Other Professional and Related	203	90	223	97	232	91	323
Public Administration	422	208	422	208	438	195	623
Industrial Not Represented	281	115	281	115			

Source: Columns (1) and (2) /1, Table 43 /

Columns (3) and (4) Classification adjustment ratios, Table A-1 multiplied by Column (1) and/or Column (2)

Columns (5) and (6)

a. From Table B-6: Total Employment (13,615 and 6,337) and non-agriculture employment (10,879 and 4,982).

b. "Industry Not Reported" was allocated to agriculture and non-agriculture in proportion to the numbers in "a" above.

Example: $\frac{2736}{13615} \times 281 = 56 + 2736 = 2792$

c. Each non-agriculture industry was multiplied by a correction factor to allocate the balance of "industry not reported" and underenumeration in proportion to the numbers in Columns 3 and 4.

Example: Male

1. Column (3): Total 13,260 less agriculture (2,555) and less industry not reported (281) = 10,424.
2. Total employment, Table B-6 (13,615) less agriculture from "b" above (2,792) = 10,823.
3. 10,823 divided by 10,424 = 1.038277, correction factor.
4. 1.038277 times each non-agriculture industry in Column (3) excluding "industry not reported" equal Column (5): For Example: 1.038277 X 1406 (Mining) = 1460.

Column (7) Columns (5) + Column (6)

TABLE B-7A

EMPLOYMENT BY INDUSTRY GROUP ADJUSTED FOR UNDERENUMERATION AND INDUSTRY NOT REPORTED, ALACHUA COUNTY, FLORIDA 1960

	Reported Census Industry Group		Census Adjusted For Underenumeration and Industry Not Reported		
	Male	Female	Male	Female	Total
Total Employed	16,614	9,901	17,131	10,146	27,277
Agriculture	1,626	485	1,709	543	2,252
Forestry and Fisheries	52	16	55	17	72
Mining	112	2	118	2	120
Construction	1,791	51	1,880	54	1,934
Manufacturing					2,542
Furniture, Lumber and Wood Products	449		47	103	574
Primary Metals	57	134	60	13	73
Fabricated Metals	7	94	8	1	9
Machinery Except Electrical	32		34	8	42
Electrical Machinery Equipment and Supplies	407		427	91	518
Other Durables	103	*Included	108	24	132
Food and Kindred Products	514	117	540	123	663
Apparel and Other	8		8		8
Printing Publications and Allied	153		161	48	209
Chemicals and Allied	165	114	173	52	225
Other Non-Durables	66		69	20	89
Railway and Railroad Express	168		176	58	234
Trucking and Warehousing	91		96	31	127
Other Transportation	134	284	141	46	187
Communications	294		309	101	410
Utilities and Sanitary Sewers	186		195	64	259
Wholesale Trade	510	97	535	102	637
Food & Dairy Products	461	266	484	281	765
Eating and Drinking Places	324	422	340	445	785
Other Retail	1,779	908	1,868	958	2,826
Finance, Insurance and Real Estate	548	340	575	359	934
Business Services	120		126	43	169

TABLE B-7A Con't.

EMPLOYMENT BY INDUSTRY GROUP ADJUSTED FOR UNDERENUMERATION AND INDUSTRY NOT REPORTED, ALACHUA COUNTY, FLORIDA 1960

	Male	Female	Male	Female	Total
Repair Services	206		216	13	229
Private Households	638	1,750	670	2,288	2,958
Other Personal		630			
Entertainment and Recreation Services	119	56	125	59	184
Education Governmental	3,386	2,144	3,555	2,262	5,817
Education Private	152	164	160	173	333
Hospitals	277	581	291	613	904
Other Professional and Related	687	769	731	811	1,532
Public Administration	693	322	728	340	1,068
Industry Not Represented	499	313			

Source: Columns (1) and (2) / 2, Table 85 / Total Male for various industry groups was found by subtracting female in that given category; those industries where grouped were apportioned according to the percentage of each industry in the combined sexes breakdown. Column (3) and Column (4) See Table B-7.

APPENDIX C

ANNUAL EMPLOYMENT BY INDUSTRY, BY PLACE OF RESIDENCE ALACHUA COUNTY, FLORIDA 1950 - 1967

It was desired to project the adjusted census data to the target years of the comprehensive plan. To realistically accomplish this by mathematical means it was necessary to establish an employment pattern which would reflect the cyclical and irregular nature of given industries, rather than to project a straight line from the two census years. Otherwise, it is unlikely that a true picture could be obtained from many industries because the possibility that one of the two census periods would occur in a trough or peak of a cycle. Once a true pattern emerged of the basic trend in the employment of a given industry projections could then be made.

The methodology followed in extrapolating the annual employment was to establish a ratio of trend between the census data and some series of published annual employment data for the same industry. Primarily this was the data published by the Florida Industrial Commission which consists of the reported employment covered under the Florida Unemployment Compensation (UC) and Unemployment Compensation for Federal Employees (UCFE) laws. In one or two cases a reasonable picture did not result from this step and as a result a single ratio with the 1960 Census and the annual data was used. This assumes of course a stable relationship between the resident employment force and the annual series used, whereas the basic ratio of trends reflect any changes in the relationship of the two data series.

Self-Employed and Unpaid Family Workers (Tables C-1 and C-2)

Since most of the annual interpolating series by industry excluded self-employed and unpaid family workers, and since employment in these groups is likely to react differently from wage and salary employment, independent estimates of employment were made for industries with 10 percent or more self-employed and unpaid family workers in the 1960 Florida Census.

The unadjusted state census percentage of self-employed and unpaid family workers in each industry was applied to the adjusted total in the industry to find adjusted estimates in 1950 and 1960. Table C-1 demonstrates this procedure using the construction industry as an illustration. State percentages were used for both the state and the county since county self-employed and unpaid family workers by industry were not given in the census. The adjusted estimates for 1950 and 1960 were used to compute ratios of trend which were multiplied by the United States annual series (Table C-2), Table C-3 shows the industries for which separate computations of self-employed and unpaid family workers were made and gives the results of following the steps shown for Alachua County.

The estimates of self-employed and unpaid family workers were subtracted from the adjusted census values by industry in 1950 and 1960 before computing ratios of trend for wage and salary workers and applying these to an appropriate annual series. When both portions, i.e. self-employed and unpaid family workers and wage and salary workers had been calculated separately, they were added together for the annual employment by industry, residence series. (Table I). Table C-4 demonstrates the computation of paid employment in the construction industry and the combination with self-employed and unpaid family workers to obtain the total in the county. In Table C-5, the calculation of Alachua annual paid employment in the furniture, lumber and wood products industry is demonstrated. This and other industries for which self-employed and unpaid family workers were not calculated separately were calculated in this manner. Where no county series data was available, a ratio of trend was established with an annual series and state reported data in certain industries.

Annual Interpolating Series

The annual series used principally in this procedure was obtained from the Florida Employment and Payrolls /7 / publications which report the number of workers covered by the unemployment compensation laws, generally referred to as "covered" workers. It was necessary to adjust the covered employment reported in this series to account for the change in coverage in 1956 from industries employing 8 or more to industries employing 4 or more persons. This adjustment was made possible by the publication in 1956 of what the covered employment would have been under the previous (8 or more employees) and the new coverage. It was assumed that the percentage increase in 1956 would have been approximately the same had it occurred in the years 1950 through 1955 and the reported figures were adjusted accordingly. (For example, the reported employees in construction in 1956 on the basis of 8 employees was 860 and on the basis of 4 or more 1,046. Reported employment for 1950 - 1955 was therefore multiplied by a factor of 1.2163 (1,046 divided by 860).

In certain categories the state reported employment was utilized to establish a ratio of trend. Naturally it must be assumed that fluctuations in a local industry in such case will be identical to that of the state, rather than independent of it. Finally, it should be noted that in some instances the detailed breakdowns in an overall grouping were related to the larger grouping for lack of more specific data. For example, finance, insurance and real estate is a major heading for which employment was reported for the county. Therefore the total employment in this general area was calculated as one industry, and since a split into three separate categories was not available. The actual control series used in interpolating are as follows:

1. County Covered Employment

    a. Manufacturing. The 1950 reported data in Employment and Payrolls included a breakdown of manufacturing by only lumber and wood products, food and kindred products and "other" manufacturing. A ratio was established with the lumber and wood products category

without difficulty. With food and kindred products the data indicated that the resident employment was larger in 1950 (268 to 158) while in 1960 the covered data was the larger figure (806 to 663). The results was a curve that was considerably higher in the earlier years but then started tapering off drastically until the 1967 estimates would have been only 59 employees. Since the covered employees in 1967 numbered 922, the latter figures was undoubtedly incorrect. In addition, because of the dominance of the classification statewide by the citrus industry which is not present to any great extent in the county, it was felt that estimates based on State reported data would not truely reflect the situation. Therefore, the estimates used was the combination of the ratio of trend for the period from 1950 to 1960 - which presumably would have reasonably reflected the true situation since it was only extrapolating between two known points - and a direct single ratio between the 1960 Census reported and the covered data for the years 1961 through 1967. While the latter does not depict a trend with regards to the relationship between the two data sources it unquestionably was more accurate than a projection based on the trend ratio.

It was known that electrical machinery equipment and supplies (SIC 36) was one of the single largest components of manufacturing employment in this county. No breakout of this industry was reported however. In response to a direct request the Florida Industrial Commission provided a listing of the covered employment, which list showed no employees prior to 1955. (The 1950 Census had shown only three employees, and in fact the industry was actually insignificant until Sperry Rand located here.) Since there was no way to establish a ratio of trend, a direct ratio assuming the same percentage coverage for all years from 1955 to 1967 as occurred in 1960 were established.

Finally, the above three classifications were deducted from the total reported employees and a ratio of trend was established for "other manufacturing".

b. Wholesale Trade. With self-employed and unpaid family workers removed. After 1965 a reclassification removed approximately 600 employees from this category thus making the data for 1967 appear illogical but the basic curve appeared reasonable.

c. Retail Trade. With self-employed and unpaid family workers removed. Eating and Drinking Places and Food and Dairy Products were interpolated with series data provided. These two groupings plus "other retail" were the only breakdowns in the census tables,

although data was available for several other categories from the covered data. Other retail was interpolated by first establishing a ratio with all retail and then subtracting eating and drinking and food and dairy products as indicated above.

d. Services. The only service breakdown available from 1950 to the present, other than the total category, was the broad category of "personal services". Therefore, all services except private households workers and education workers, which are not covered, were estimated in a single ratio of trend extrapolation.

2. Interpolation With State Reported Data

Three sources of state reported employment series data were used for interpolation by ratio of trend. The first is from the State Industrial Commission reports of Florida Employment and Payrolls. /7_/. This data was used in interpolating:

a. Mining

b. Communications

c. Public Utilities

The second series used is the estimated total employment as reported in the Employment Statistics Bulletin /12_/. Reported state, local and federal employees were combined and used in interpolating the Public Administration category.

The final series in which state data was used was from the U. S. Bureau of Labor Statistics Employment and Earnings Statistics for States and Areas /11_/. This series was used for the following:

a. Trucking and Warehousing. Motor freight was used as an interpolator.

b. Railroads and Railway Express Service. SIC 40 - Railroad transportation was utilized.

c. Other Transportation. Total transportation with "a" and "b" data removed was utilized.

TABLE C-1

CALCULATION OF ADJUSTED SELF-EMPLOYED AND UNPAID FAMILY WORKERS IN CONSTRUCTION, ALACHUA COUNTY AND FLORIDA 1950 and 1960

Employment Category	1950			1960		
	Male	Female	Total	Male	Female	Total
Florida Unadjusted Census						
1. Total Employment	88,220	2,366	90,586	150,464	6,720	157,184
2. Self-Employed and Unpaid Family Workers	14,654	454	15,108	29,991	1,033	31,024
3. Percentage Self-Employed & Unpaid Family Workers	16.6107	19.1885	-	19.9323	15.3720	-
4. Percentage Wage and Salary Workers	83.3893	80.3115	-	80.0677	84.6280	-
Adjusted Census, Florida						
5. Total Employment	90,674	2,320	92,994	161,230	4,991	166,221
6. Wage and Salary Workers	75,612	1,875	77,487	129,093	4,224	133,317
7. Self-Employed and Unpaid Family Workers	15,062	445	15,507	32,137	767	32,904
Adjusted Census, Alachua County						
8. Adjusted Census Total	1,460	29	1,489	1,880	54	1,934
9. Number of Wage and Salary Workers	1,217	23	1,240	1,505	46	1,551
10. Number of Self-Employed and Unpaid Family Workers	243	6	249	375	8	303

Source: Lines 1 and 2: / 1, Table 83, / and / 2, Table 129 /
Line 3: Line 2 divided by Line 1.
Line 4: 100.0000 percent - line 3.
Line 5: Table B-7
Line 6: Line 5 X Line 4
Line 7: Line 5 - Line 6
Line 8: Table B-7
Line 9: Line 4 X Line 8.
Line 10: Line 8 - Line 9.

TABLE C-2

ANNUAL SELF-EMPLOYED AND UNPAID FAMILY WORKERS ESTIMATED FROM UNITED STATES DATA USING RATIO OF TREND, CONSTRUCTION INDUSTRY, ALACHUA COUNTY, FLORIDA 1950 to 1967

Year	U. S. Total Non-Agriculture, Self Employed and Un-Paid Family Workers (March) (1)	Alachua County Self-Employed and Un-Paid Family Workers In Construction (2)	Trend of the Ratios (3)	U. S. Total Non-Agriculture, Self Employed and Un-Paid Family Workers (March) (4)	Alachua County Self-Employed and Un-Paid Family Workers In Construction (5)	Trend of the Ratios (5)	Total Alachu County Mal & Female Se Employed an Unpaid Fami Workers (6)
1950	4,881	243	.0497849	1,518	6	.0039526	249
1951	4,826	252	.0522092	1,586	6	.0040307	268
1952	4,562	249	.0546335	1,442	6	.0041088	255
1953	4,736	270	.0570578	1,473	6	.0041869	276
1954	4,734	282	.0594821	1,455	6	.0042650	288
1955	4,973	302	.0619064	1,508	7	.0043432	309
1956	4,985	321	.0643307	1,543	7	.0044213	328
1957	4,972	332	.0667550	1,630	7	.0044994	339
1958	4,999	346	.0691793	1,652	8	.0045775	354
1959	5,004	358	.0716036	1,803	8	.0046556	366
1960	5,066	375	.0740279	1,690	8	.0047337	383
1961	5,234	400	.0764522	2,094	10	.0048118	410
1962	5,029	397	.0788765	1,977	10	.0048899	407
1963	4,869	396	.0813008	1,924	10	.0049681	406
1964	4,690	393	.0837251	1,899	10	.0050462	403
1965	4,604	397	.0861494	1,910	10	.0051243	407
1966	4,394	389	.0885737	1,867	10	.0052024	399
1967	3,892	354	.0909980	1,693	9	.0052805	363

ource: Col.'s (1) and (4): /9 and 10/ 1964 - 1966 data was not available broken down by Sex, therefore the total given was spread on the basis of the proportional percentage trend between 1963 and 1967.

Col. (2): 1950 and 1960 from Table C-1, 1951 - 1959 and 1961 - 1967: Col. (1) times Col. (3)

Col. (3): Column (2) divided by Column (1), for census years 1950 and 1960, the 1960 ratio minus the 1950 ratio divided by (10) ten years equals an annual ratio change; 1950 plus (or minus) annual ratio change equals 1951 ratio; plus the annual ratio change equals 1952 and etc. Where 1960 ratio is lesser than the 1950 ratio the process is reversed and the annual rate subtracted for each year.

TABLE C-2 Con't.

ANNUAL SELF-EMPLOYED AND UNPAID FAMILY WORKERS ESTIMATED FROM UNITED STATES DATA USING RATIO OF TREND, CONSTRUCTION INDUSTRY, ALACHUA COUNTY, FLORIDA 1950 to 1967

ource, Con't.

Col. (5): 1950 and 1960 from Table C-1, 1951 - 1959 and 1951 - 1967: Col. (4) X Col. (6)
Col. (6): See explanation Col. (3)
Col. (7): See Col. (2) plus Col. (5)

TABLE C-3

ESTIMATED SELF-EMPLOYED AND UNPAID FAMILY WORKERS, ALACHUA COUNTY 1950-1967

Year	Construction	Trucking & Warehousing	Wholesale	Food & Dairy	Eating & Drinking	Other Retail	Finance, Insurance & Real Estate	Business Service	Repair Service	Other Personal Service	Entertainment & Recreation	Medical & Health	Other Professio & Relate
1950	249	15	49	177	149	417	91	19	92	257	27	79	87
1951	268	15	51	173	149	424	96	21	90	262	27	94	100
1952	255	15	50	160	137	404	94	20	83	244	25	101	107
1953	276	16	55	162	140	425	102	22	84	252	26	118	123
1954	288	16	57	156	137	429	106	22	82	252	25	132	136
1955	309	17	61	168	139	449	114	25	82	262	27	150	153
1956	328	17	65	155	141	466	121	27	82	269	27	167	171
1957	339	19	68	161	142	479	126	27	81	276	27	185	184
1958	354	19	70	159	142	489	131	29	79	279	27	201	200
1959	366	19	74	161	145	507	139	31	77	291	27	223	216
1960	383	20	78	155	140	511	146	32	77	286	27	235	230
1961	410	21	84	171	154	559	162	36	77	319	29	277	258
1962	407	21	83	160	144	543	160	35	72	305	28	281	261
1963	406	20	83	154	138	534	159	36	67	297	27	288	267
1964	403	21	82	149	132	525	159	36	63	290	27	183	272
1965	407	21	83	145	130	525	159	37	60	288	26	189	281
1966	394	20	81	139	123	512	158	37	56	278	25	189	282
1967	363	19	74	124	108	461	140	33	48	249	23	175	261

Sources: The values for 1950 and 1960 were found by using Florida proportions in self-employed and unpaid family workers. The remaining values were computed by the same method as used to relate Florida to U. S. data (Tables D-1 and D-2).

TABLE C-4

ANNUAL WAGE & SALARY WORKERS ESTIMATED FROM COVERED EMPLOYMENT USING RATIO OF TREND & COMBINED WITH SELF-EMPLOYED & UNPAID FAMILY WORKERS CONSTRUCTION INDUSTRY, ALACHUA COUNTY 1950-1967

ear	Construction Employees On Alachua County Payroll (March) (1)	Adjusted Census Employment (Except Self-Employed and Unpaid Family Workers) (2)	Ratio of Trend (3)	Self Employed & Unpaid Family Workers (4)	Total Construction Employees (5)
950	643	1,240	1.928460(3)	249	1,489
951	562	1,066	1.896007	268	1,334
952	405	755	1.863554	255	1,010
953	450	824	1.831101	276	1,100
954	581	1,045	1.798648	288	1,333
955	1,034	1,826	1.766195	309	2,135
956	1,046	1,813	1.733742	328	2,141
957	1,193	2,030	1.701289	339	2,369
958	1,173	1,958	1.668836	354	2,312
959	1,125	1,841	1.636382	366	2,207
960	967	1,551	1.603929(2)	383	1,934
961	1,144	1,798	1.571477	410	2,208
962	1,176	1,810	1.539024	407	2,217
963	1,433	2,159	1.50657	406	2,565
964	1,596	2,353	1.474117	403	2,756
965	1,926	2,777	1.441664	407	3,184
966	2,200	3,100	1.409211	399	3,499
967	2,118	2,916	1.376758	363	3,279

ource: Column (1) /7 /

Column (2) 1950 and 1960, Table B-7 Less Self-Employed and Unpaid Family Workers from Table C-3. 1951-1959 and 1961 - 1967, Column (3) X Column (1).

Column (3) 1950 and 1960 = Column (2) divided by Column (1). 1950 ratio less 1960 ratio divided by 10 equals change per year. 1950 plus change/year = 1951 etc.

For other industries where 1960 ratio was greater than 1950 the trend would be reversed and the change per year added or subtracted for each year.

TABLE C-5

ESTIMATED ANNUAL EMPLOYMENT USING RATIO OF TREND WITH COUNTY COVERED EMPLOYMENT, FURNITURE, LUMBER AND WOOD PRODUCTS INDUSTRY ALACHUA COUNTY, FLORIDA 1950 - 1967

Year	Alachua County Covered Employees	Adjusted Alachua County Paid Employment	Ratio of Trend
1950	992	876	883064(5)
1951	1,084	960	885294
1952	1,108	983	887524
1953	1,250	1,112	889754
1954	1,016	906	891984
1955	941	841	894214
1956	827	741	896443
1957	715	643	898673
1958	519	468	900903
1959	647	584	903133
1960	634	574	905362(8)
1961	573	520	907593
1962	582	530	909822
1963	602	549	912052
1964	609	557	914282
1965	499	457	916512
1966	616	566	918742
1967*	635	585	920971

* Reclassification added estimated 150 to this category in 1966.

Source:

Column (1) /7 /
Column (2) 1950 and 1960 - Table B-7
1951 - 1959 and 1961 - 1967 - Column (3) X Column (1)
Column (3) 1950 and 1960, Adjusted industry total from Table B-7 divided by Column (1). 1951 - 1952 and 1961 - 1967, 1960 ratio less 1950 ratio divided by 10 = annual rate of change, added to 1950 equals 1951 adjusted etc.

APPENDIX D

FORMULATION OF REGRESSION EQUATIONS OR PROJECTING ANNUAL ESTIMATED EMPLOYMENT

First approximations of resident employment for 1975 and 1980 were made by mathematically extending forward to those dates the annual data estimated for each industry group. The first projections of such data was done by Dr. Frank G. Martin of the Department of Statistics at the University of Florida, whose assistance in this report is gratefully acknowledged. While it was necessary to later revise some of the forecasts provided by Dr. Martin because of revisions in the base data, several of the equations appearing in Table D-1 were calculated by him. The forecasts were derived as follows in Dr. Martin's words:

> "This was accomplished by determining the "best" regression relationship between time (t) and the annual employment. In determining this regression relationship, the linear equation:
>
> $$\text{Response} = b_o + b_1 t$$
>
> was fitted first. The quadratic term was added to the model only if its inclusion significantly improved the fit of the regression relationship."

The actual regression equations are provided in Appendix Table D-1. In this equation t = the number of years between the original date which formed the base for the equation and the desired forecast date. For example, if the base period was for 1950, then t = 1 in 1950, and t = 26 in 1975.

TABLE D-1

REGRESSION EQUATIONS USED FOR FIRST APPROXIMATION OF 1975 - 1980 RESIDENT EMPLOYMENT, ALACHUA COUNTY, FLORIDA

Industry Group	Base Period	Equation
Agriculture, Forestry & Fisheries	1950-67	$4739.40 - 262.64t + 3.84t^2$
Mining	1950-67	$36.71 + 7.02t$
Manufacturing		
Furniture, Lumber & Wood Products	1957-67	$532.97 - 2.58t$
Food and Kindred Products	1950-67	$349.92 + 27.00t$
Electrical Machinery, Equipment & Supplies	1955-67	$72.31 + 56.69t$
Other Manufacturing	1950-67	$535.70 + 23.45t$
Transportation, Communications and Public Utilities		
Railroads & Railway Express	1950-67	$475.09 - 20.68t$
Trucking and Warehousing	1950-67	$57.64 + 5.66t$
Other Transportation	1950-67	$150.17 + 6.53t - 0.31t^2$
Communications	1950-67	$186.18 + 17.64t$
Utilities	1950-67	$131.21 + 13.18t - 0.28t^2$
Retail Trade		
Food and Dairy Products	1950-67	$369.33 + 44.94t$
Eating & Drinking Places	1950-67	$557.58 + 0.11t + 1.93t^2$
Other Retail	1950-67	$1589.16 + 116.43t$
Wholesale Trade	1950-64	$369.40 + 30.14t$
Finance, Insurance & Real Estate	1950-67	$311.42 + 37.06t + 2.02t^2$
Services		
Private Household Workers		
a. Ratio of Trend Annual Data	1950-67	$928.06 + 122.31t - 3.23t^2$
b. Single Ratio 1960-67 + Ratio of Trend	1950-67	$2157.75 - 54.93t$
All Other Services Except Education		
a. Ratio of Trend Annual Data	1950-67	$1372.33t + 304.78t$
b. Single Ratio 1960-67 + Ratio of Trend	1950-67	$1614.68 + 244.45t$
Local Public Administration	1950-67	$568.37 + 30.17t + 1.25t^2$
Construction	1950-67	$1064.33 + 112.24t$

Source: Dr. Frank G. Martin, Associate Statistician, Department of Statistics University of Florida calculated the original regression equations based on the 1950 - 1967 preliminary annual data. Subsequently, the Department of Community Development revised certain base data and consequently changed some of the equations on the basis of the new data.

TABLE E-1

SUPERVISORY AND INSTRUCTIONAL EMPLOYMENT
ALACHUA COUNTY BOARD OF PUBLIC INSTRUCTION
1949/50 to 1965/66

Year	Principles & Supervisory Principles	Teachers	Other Instructors	Superintendent Of Instruction	Other County Wide Instructional Personnel	Total
49/50	18	388	4			410
50/51	18	397	-			415
51/52	12	419	-			431
52/53	14	394	41			449
53/54	20	461	3			484
54/55	22	477	14			512
55/56	24	513	16			553
56/57	25	506	19			550
57/58	25	560	23			608
58/59	29	591	26			646
59/60	30	603	33			666
60/61	31	629	36			696
61/62	31	619	43	7		700
62/63	31	649	57	7	7	751
63/64	33	714	56	11	7	821
64/65	34	753	46	7	12	852
65/66	36	820	43	8	9	916

Source: /21/

REFERENCES

1. U.S. Bureau of the Census, U.S. Census of Population: 1950, Vol. 11, Characteristics of the Population, Part 10, Florida (1952), U.S. Government Printing Office, Washington, D.C., 1952.

2. U. S. Bureau of the Census, U. S. Census of Population: 1960, Vol. 11, Characteristics of the Population, Part 10, Florida, U. S. Government Printing Office, Washington, D. C., 1961

3. Harms, Louis T., James, Rosella, and Springer, Robert C. Projective Models of Employment By Industry and By Occupation for Small Areas: A Case Study, Bureau of Economic and Business Research, Temple University, Philadelphia, Pennsylvania, 1966.

4. U. S. Bureau of the Census, U. S. Census Population: 1950, Vol. IV, Special Reports Part 2, Chapter C, Institutional Population, U. S. Government Printing Office, Washington, D. C. 1953

5. U. S. Bureau of the Census, U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, Part I, United States Summary, U. S. Government Printing Office, Washington, D. C., 1953.

6. U. S. Bureau of the Census, U. S. Census of Population: 1960, Vol. I, Characteristics of the Population, Part I, United States Summary, U. S. Government Printing Office Washington, D. C., 1964

7. Florida Industrial Commission, Research and Statistics Division, Florida Employment and Payrolls, Covered by Unemployment Compensation Law and Unemployment Compensation for Federal Employees by County and by Industry. Vols. III - XIX, 1950-1966

8. Urban Land Institute, The Community Builders Handbook, Anniversary Edition, J. Ross McKeever, editor, Urban Land Institute, Washington, D. C. 1968

9. U. S. Bureau of the Census, Current Population Reports, Annual Report on the Labor Force, U. S. Government Printing Office, Washington, D. C., various issues.

10. U. S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, Vol. 13, No. 10, April 1967, Washington, D. C.: U. S. Government Printing Office.

11. U. S. Department of Labor, Bureau of Labor Statistics Employment and Earnings Statistics for States and Areas 1939-1966, Bulletin No. 1370-4 U. S. Government Printing Office, Washington, D. C., July, 1967.

12. Florida Industrial Commission, Employment Statistics, various issues of the bulletin; March data.

REFERENCES, Con't

13. Cook, Edgar Dallas, Jr., An Economic Base Study of the Metropolitan Area of Gainesville, Florida, Masters Thesis, University of Florida, December, 1964.

14. Maddox, James G., Leibhafsky, E.E., Henderson, Vivian W., and Hamilton, Herbert M., The Advancing South, The Twentieth Century Fund, New York, 1967.

15. U.S. Department of Agriculture, Economic Research Service, Agriculture Statistics, U.S. Government Printing Office, various issues.

16. U.S. Bureau of the Census, U.S. Census of Agriculture: 1964, Statistics for State and Counties, Florida, Vol. 1, Part 29, U.S. Government Printing Office, Washington, D.C., 1967.

17. University of Florida, Bureau of Economic and Business Research, Florida Statistical Abstract, Gainesville, Florida, 1967 and 1968.

18. Davis, Jesse, History of Alachua County, Gainesville, Florida, Alachua County Historical Commission, 1960.

19. Florida Industrial Commission, 1967 Florida Tourist Study, Tallahassee, 1968.

20. Hildreth, Charles Halsley, A History of Gainesville, Florida, Doctoral Dissertation, University of Florida, 1954.

21. State Superintendent of Public Instruction, Biennial Report of the Superintendent of Public Instruction, Tallahassee, Florida, various issues.

22. Churchill - Fulmer Associates, A Master Guide Plan for Gainesville, Florida, New York, New York, August, 1950.

23. Bureau of Economic and Business Research, University of Florida, Business and Economic Dimensions, Vol. 3, No. 6, June, 1967.

24. University of Florida, Bureau of Economic Research, Economic Leaflets, various issues.

25. University of Florida, Office of Academic Affairs, Fact Book, University of Florida looseleaf report updated periodically.

26. Anderson, Arvid A., A Study of Income - Expenditures and Readership Patterns Reported by University of Florida Students, Winter Trimester, 1967. Unpublished paper.

27. Department of Community Development, Population Study, Comprehensive Plan Report #3, January, 1968.

REFERENCES, Con't

28. Thompson, Ralph Burnham, University of Florida Students - A Ten Million Dollar Market, Marketing Study No. 1, Department of Marketing, College of Business Administrative, University of Florida, Gainesville, Florida, 1962 typewritten manuscript.

29. Department of Housing and Urban Development, FHA, Field Market Analysis Service, Analysis of the Gainesville, Florida Housing Market as of November 1, 1966, August, 1967.

30. Department of Community Development, Enrollments and Employment University of Florida and Santa Fe Junior College, September, 1967.

31. U.S. Bureau of the Census, Census of Government: 1962, U.S. Government and Printing Office, Washington, D.C., 1963.

32. Chapin, F. Stuart, Jr., Urban Land Use Planning, University of Illinois Press, Urbana, 1965, 2nd Edition.

33. Hamilton, Thomas and Associates, Inc. Exploratory Survey and Analysis Relating to a Research Program for A Gainesville Economic Base Study, September, 1966.

34. Tiebout, Charles M., The Community Economic Base Study, Committee for Economic Development, Supplementary Paper No. 16, December, 1962.

35. U.S. Bureau of the Census, Statistical Abstract of the United States, U.S. Government and Printing Offices, various issues.

36. Rand McNally and Co., Rand McNally Commercial Atlas and Marketing Guide, 99th Edition, Chicago, Updated Annually.

37. University of Florida, Bureau of Economic and Business Research, Economic Survey of the Community of Gainesville, Florida, 1950.

38. The Ohio State University, Bureau of Business Research, I. Employment and Value Added by Manufacture, Monogram No. 126, The Comprehensive Regional Plan of Columbus and Franklin County, Ohio 19.

39. U.S. Bureau of the Census, County Business Patterns, Florida, U.S. Government Printing Offices, Washington, D.C., various dates.

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